

UNITED STATES AIR FORCE
RESERVE
HANDBOOK 2008



Extraordinary Citizens . . . Unrivalled Wingmen

The Air Force Reserve is a powerful manifestation of the finest of American qualities: pursuit of happiness and dedication to nation.

It is an organization of ordinary working people, wedded to the fabric of our great nation through their individual pursuits: they are linguists, utility technicians, police, railway engineers, entomologists, school teachers, salespeople, analysts, aviators and nurses, to name just a few. Some are experts in their chosen career fields, some are executives, and some work the line. All are dedicated to the greater purpose of serving our nation; all are essential.



The Air Force Reserve, through a variety of flexible constructs and exciting mission specialties, provides these dedicated individuals the opportunity to do both. In so doing, it gains from them their civilian skills, capabilities and expertise; alternative approaches to solving problems; experience and judgment. And their civilian employers benefit from Reservist employees instilled with the enduring values of the USAF—integrity, service before self, and excellence in all we do.

Secretary of Defense Robert Gates recently remarked that if we are to meet the myriad challenges facing our nation, we must strengthen and fully integrate other important elements of national power; that military success is not sufficient to win in conflict; that we must urgently devote time, energy, and thought to how we better organize ourselves to meet these challenges.

The United States Air Force is already recognizing the benefits of using all of its resources from the Reserve, Guard and Regular components: it increasingly relies on Reservists to support operational missions throughout the world. Moreover, the Air Force is encouraging the Reserve and Guard to integrate more fully with the Regular Air Force in a whole host of missions, mindful that relationships in which partners see the value in each other will achieve added value for both.

For its part, the Air Force Reserve understands Reservists choose to serve in a way that works for them, and it strives to meet this need. Perhaps most importantly, the flexibility of the Air Force Reserve allows members of any given community to serve the Air Force and the nation.

As the nation looks for ways to strengthen its organizations and integrate all of the untapped resources it will need in facing the challenges of the 21st Century, we submit that a model by which ordinary people, dedicated to serving their country in a way that meets both their needs and the needs of the nation, is already manifest in the USAF everyday, - in the extraordinary Americans of the Air Force Reserve.

We invite you to turn the page and explore how these extraordinary Airmen contribute to the rich tapestry that has become the United States Air Force Reserve. You just might be amazed. We are everyday.

A handwritten signature in black ink, reading "Charles E. Stenner, Jr." in a cursive style.

CHARLES E. STENNER, JR., Lt Gen, USAF
Chief of Air Force Reserve
Commander, Air Force Reserve Command

¹ Secretary of Defense Robert M. Gates, Landon Lecture Series, Kansas State University, Manhattan, Kansas; November 26, 2007.

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How This Handbook is Organized

This Handbook is primarily a reference book. It is intended to supply the reader with a basic framework for understanding the Air Force Reserve. At its most basic, this Handbook is divided into two parts: (1) the organization, and (2) what we do.

Part 1 - The Air Force Reserve

We begin by explaining our statutory charter. We then talk about the three broad categories of Reservists in terms of what they may be used for and how often they train. We provide some demographics and statistics to enhance your understanding of what we look like by race, ethnicity, gender, level of education, etc. Lastly, we explain how we are organized, not only relative to the United States Air Force, but as a distinct organization.

Part 2 - The Missions We Perform

The second part of this book is dedicated to the missions we perform, the capabilities these missions provide, and the equipment we use to perform them. These are laid out sequentially in the order in which they might logically occur should we be asked to build our force from scratch.

We start with our foundation: our global architecture of satellites and networked systems. We next describe the command and control, communication, and information analysis systems that are enabled by this architecture. We then describe some of the many support missions and capabilities required to sustain the Air Force Reserve. Lastly we describe the remarkable variety of delivery platforms we operate to accomplish our flying missions.

Thus, on these mission pages you will find the specific mission, the capability it provides to the USAF, a description of the weapon system, the contractors who supply this weapon system, the system specifications, the developmental status of the system, and the AFR units that operate the system.

Appendix A: We list each state alphabetically, and within each state we list the numbered air forces, wings or groups of the Air Force Reserve, and the bases on which they operate. In parentheses we list the pages of this handbook on which each organization is discussed. We also provide the website of each organization and a contact number should you desire more information.

Appendix B: Military terminology can be confusing. Should you forget the meaning of a term or what that term represents, we have provided a glossary near the back of the book for your reference.

Part 1

The Air Force Reserve

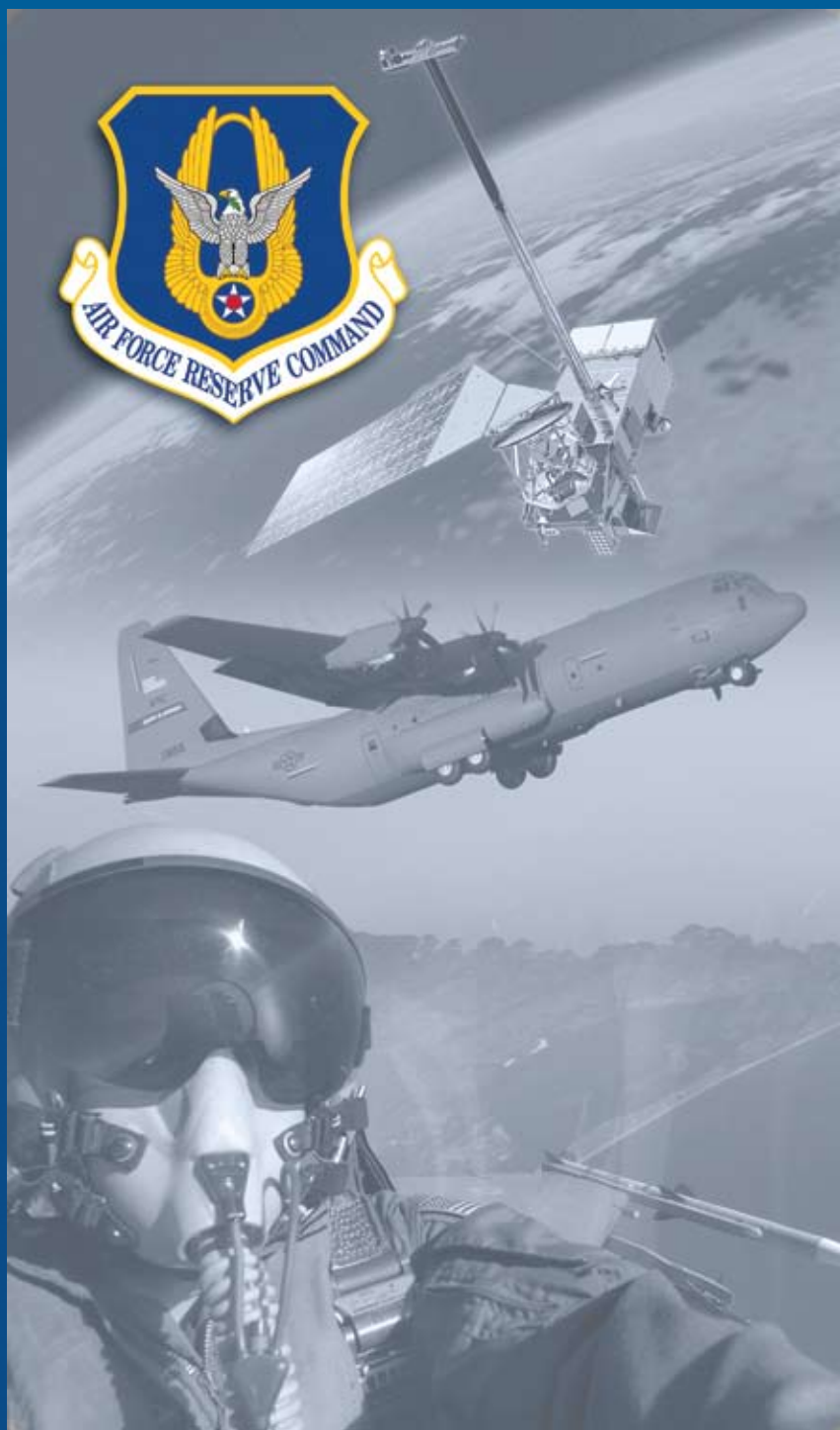
What is the AFR?

What is a Reservist?

What We Look Like - Demography

How We are Organized

We are a Force Provider





What is the Air Force Reserve?

The Air Force Reserve is a reserve component of the Air Force created by Congress to provide a reserve for active duty. It consists of the members of the officers' section of the Air Force Reserve and of the enlisted section of the Air Force Reserve. It includes all Reserves of the Air Force who are not members of the Air National Guard of the United States.¹

The purpose of the Air Force Reserve is to provide trained units and qualified persons available for active duty in the United States Air Force, in time of war or national emergency, and at such other times as the national security may require, to fill the needs of the armed forces whenever more units and persons are needed than are in the regular components.²

Whenever Congress determines that more units and organizations are needed for the national security than are in the regular components of the ground and air forces, the Army National Guard of the United States and the Air National Guard of the United States, or such parts of them as are needed, together with units of other reserve components necessary for a balanced force, shall be ordered to active duty and retained as long as so needed.³

¹ 10 U.S.C. § 10110.

² 10 U.S.C. § 10102.

³ 10 U.S.C. § 10103.

What is a Reservist?

A Reservist is a member of the United States military who serves in the Reserve on at least a part-time basis and is available for active duty in times of war, national emergency, limited emergency or operational need. Most Reservists maintain separate, civilian employment. Reservists serve voluntarily. There exist some members in the Reserve as a part of their mandatory service obligation incurred when first entering military service (generally to finish the balance of an 8-year contract not served on active duty).

The Reserves are structured to meet varying levels of response needs of the United States military, while also allowing its members to participate according to their availability and remaining sensitive to the needs of civilian employers. Accordingly, each member of the Air Force Reserve is placed in, and trains according to, one of the following 3 categories: Ready Reserve, Standby Reserve, or Retired Reserve.¹

Total AFR Strength – 192,215



Figure 1a

Note: Source Data for Figures 1a-1f: AFR MILPDS; numbers represent actual strength of reservists as of 30 Sep 2007.

Ready Reserve

The Ready Reserve² consists of units or individuals, or both, liable for active duty in time of war, or national emergency, or as needed for operational missions or more limited emergencies. Within the Ready Reserve of the Air Force Reserve there is a **Selected Reserve** and **Individual Ready Reserve**.

Total Ready Reserve – 120,552

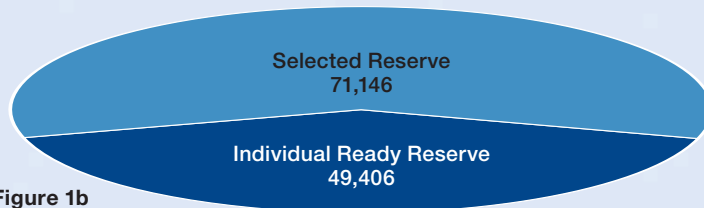


Figure 1b

¹ See, generally, 10 U.S.C. § 10141 et seq.

² 10 U.S.C. § 10142.

The **Selected Reserve** consists of *units* and *individuals* in the Ready Reserve designated by the Air Force and approved by the Chairman of the Joint Chiefs of Staff, as so essential to initial wartime missions that they have priority over all other Reserves. Except as specifically provided in regulations prescribed by the Secretary of Defense, members of the Selected Reserve are required to: (1) participate in at least 48 scheduled drills or training periods each year and serve on active duty for training of not less than 14 days during each year; or (2) serve on active duty for training of not less than 14 days during each year; or (3) serve on active duty for training for not more than 30 days during each year. Operational needs routinely necessitate additional participation beyond minimum annual training and participation requirements.³

Because the Selected Reserve has priority over all other Reserves, there are cadres of employees dedicated to ensuring the Selected Reserve is trained. These cadres make up what is commonly known as full-time support (FTS), and they are responsible for organizing, administering, instructing, recruiting, training, maintaining supplies, equipment and aircraft and performing other functions in the execution of operational missions and readiness preparations.⁴ As a component, the Air Force Reserve relies primarily on Air Reserve Technicians (ARTs)⁵ and Active Guard and Reserve (AGRs)⁶ to perform these functions.

ARTs are required to be a military member of the Selected Reserve unit they are administering.⁷ About 10,000 of the Air Force Selected Reserve are ARTs. These ARTs, combined with nearly 47,000 Unit Reservists comprise 80 percent of the Selected Reserve.

Another important form of FTS is **AGRs**. Unlike ARTs, AGRs can be assigned to Regular component staff for the purposes of administering and coordinating Reserve programs and activities within and/or supporting that command. There are roughly 2,400 AGRs in the Air Force Reserve.

The Air Force Reserve is committed to deploying Selected Reserve units and individuals within 72 hours of notification in most mission areas. Accordingly, the AFR keeps its Selected Reserve members mission ready; training to the same standards and currencies as the Regular Air Force

Members of the Ready Reserve that are not assigned to a Reserve unit are known as Individual Mobilization Augmentees or "**IMAs**".⁸ These are trained Reservists that augment Regular Air Force units to support mobilization requirements, contingency operations, operations other

³ 10 U.S.C. § 10143

⁴ DoDI 1205.18, May 4, 2007.

⁵ 10 U.S.C. § 10216.

⁶ 10 U.S.C. § 101(d)(6)(A).

⁷ 10 U.S.C. § 10218.

⁸ 10 U.S.C. § 10143.

than war, or other specialized or technical requirements. IMA training requirements are determined by the unit to which they are assigned.⁹

IMAs bring a great deal of experience to the Reserve; their experience helps the Regular Component accomplish its mission, whether it be by deploying with the Regular unit, backfilling positions that have been vacated by Regular component members deploying, or performing missions at the normal duty station. They perform the full range of Air Force missions. There are roughly 11,000 IMAs in the AFR, although their numbers will decline within the next year to roughly 8,000 due to budget cuts.

Total Selected Reserve – 71,146

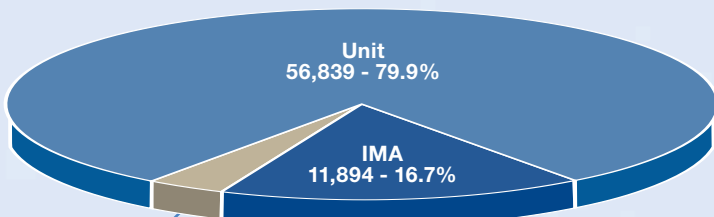


Figure 1c AGR 2,413 - 3.4%

The **Individual Ready Reserve** consists of those members of the Ready Reserve who are not in the Selected Reserve. The Individual Ready Reserve is a manpower pool, consisting primarily of individuals having had training, having served previously in the Regular component or in the Selected Reserve, and having some period of their military service obligation remaining; these number in excess of 45,000. Members of the Individual Ready Reserve may participate voluntarily in training, without pay, in most circumstances, and for pay in rather limited circumstances.¹⁰

Total Individual Ready Reserve – 49,406

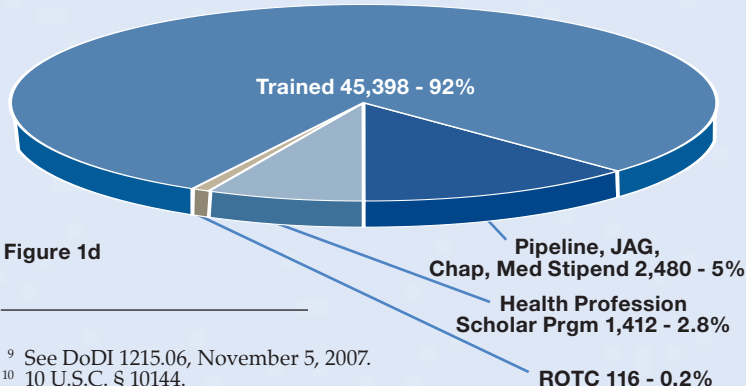


Figure 1d

⁹ See DoDI 1215.06, November 5, 2007.

¹⁰ 10 U.S.C. § 10144.

Standby Reserve

The Standby Reserve is a pool of trained individuals who could be ordered to active duty only as provided in time of war or of national emergency, but subject to the following limitations: (1) no unit or member of the Standby Reserve may be ordered to active duty unless the Secretary of the Air Force, with the approval of the Secretary of Defense, determines that there are not enough of the required kinds of units in the Ready Reserve that are readily available; and (2) no other member in the Standby Reserve may be ordered to active duty as an individual without his consent, unless the Secretary of the Air Force, with the approval of the Secretary of Defense, determines that there are not enough qualified members in the Ready Reserve in the required category who are readily available.¹¹ The Standby Reserve consists of personnel who maintain their military affiliation without being in the Ready Reserve. Standby Reservists are generally members that cannot meet their obligations under the Ready Reserve and are therefore placed on either the *Active Status List*¹² or the *Inactive Status List*.¹³

Those on the *Active Status List* may participate voluntarily, without pay, for retirement points only, and may also be considered for promotion, and if selected, be promoted. Reservists on the active status list are: (1) those designated as a “key employee” by their civilian employer and with the concurrence of the Air Force, will remain in the Standby Reserve as long as they maintain their “key employee” status; (2) those that have not fulfilled their mandatory service obligation; (3) those that have been temporarily assigned to the Standby Reserve from the Ready Reserve because of hardship, or other cogent reason but who intend to return to the Ready Reserve; and (4) those that have completed at least 18 but less than 20 years of active service.¹⁴

Total Standby Reserve—10,154

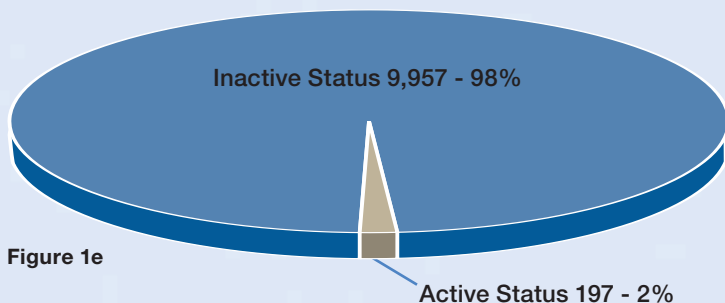


Figure 1e

¹¹ 10 U.S.C. § 10151.

¹² 10 U.S.C. § 14001 et seq.

¹³ 10 U.S.C. § 10152.

¹⁴ DoDI 1215.06 February 7, 2007.

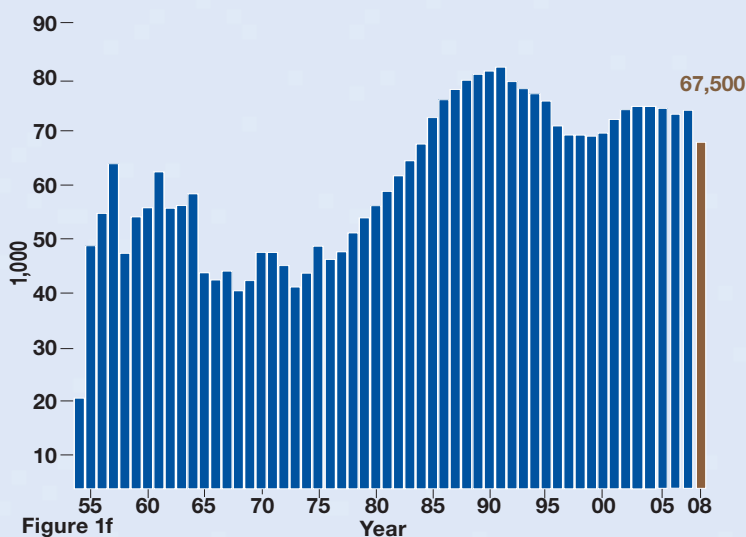
Members on the *Inactive Status List* may not participate for points, pay nor promotion credit and may not be considered for promotion nor be promoted.¹⁵ These are mostly members who would be eligible for Reserve retirement but have not yet attained the age of 60, and whose skill may be of future use to the Air Force.

Retired Reserve

The Retired Reserve consists of Reservists who have met the requisite 20 years of service and are receiving retired pay; have met the requisite 20 years of service, but are not yet 60 years of age; are at least 60 years of age but have not yet applied for retired pay; or are members retired for physical disability under sections 1201, 1202, 1204, or 1205 of Title 10 U.S.C.; Reserve members who have completed at least 20 years of active duty service; or Reserve members who have retired under special circumstances as Authorized by the Assistant Secretary of Defense of Reserve Affairs.¹⁶

Retired Reservists who are otherwise qualified voluntarily may train, with or without pay within the resources authorized by the Secretary of the Air Force. The Secretary of the Air Force may order a Retired Reservist to active duty for 12 months within a 24 month period for duties he considers necessary in the interest of national defense. If ordered to active duty for war or national emergency, a Retired Reservist may be required to serve for an indefinite period of time.

Historical Strength (Selected Reserve)

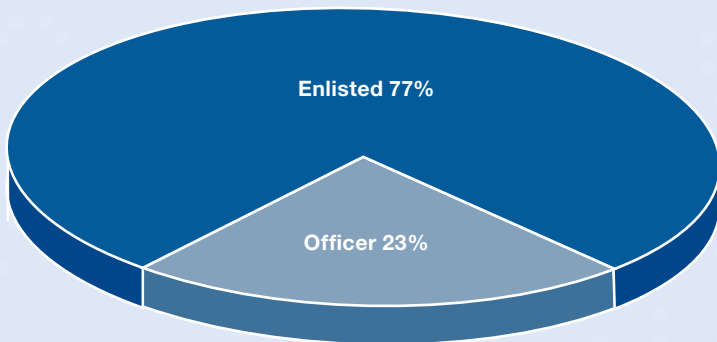


¹⁵ 10 U.S.C. § 10153

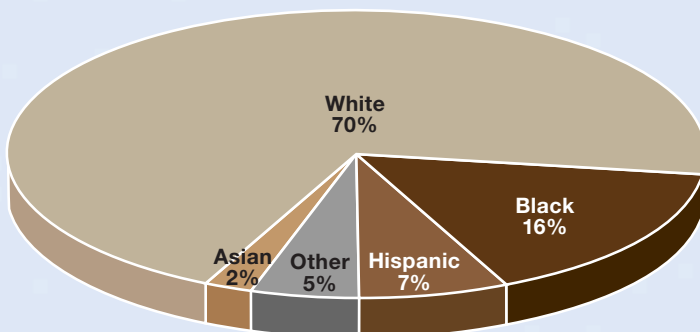
¹⁶ 10 U.S.C. § 10154.

What We Look Like - Demography¹⁷

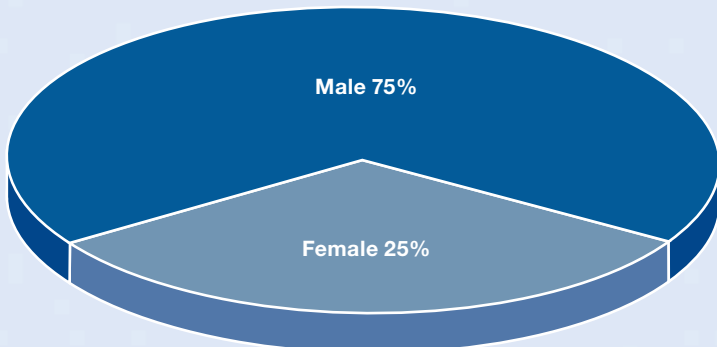
AF Reserve (Selected Reserve) Officer/Enlisted



AF Reserve (Selected Reserve) Race/Ethnicity

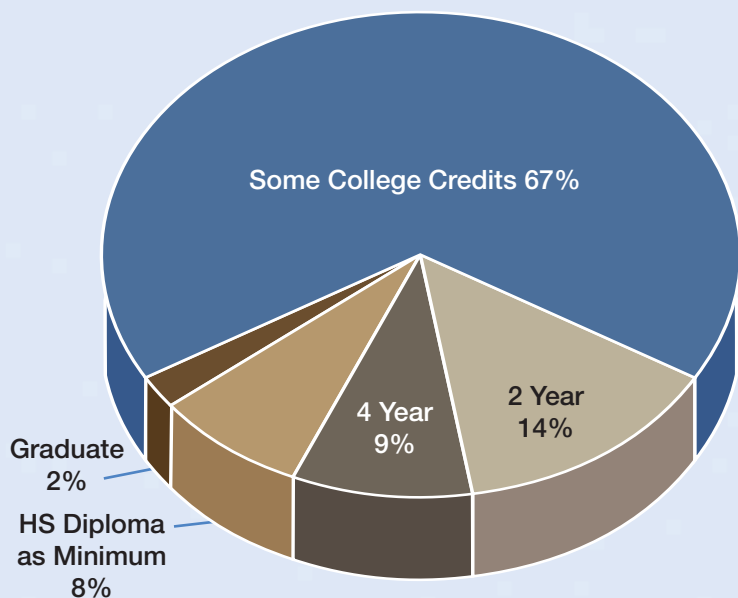


AF Reserve (Selected Reserve) Gender

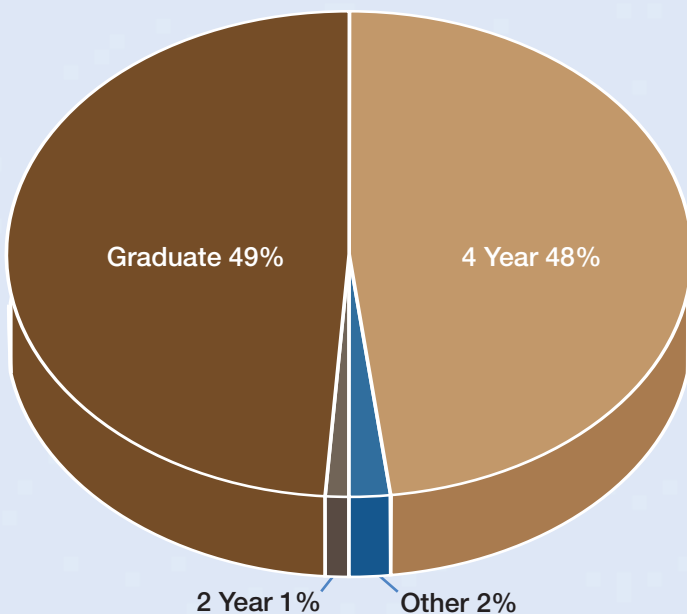


¹⁷ as of 30 Sep 2007

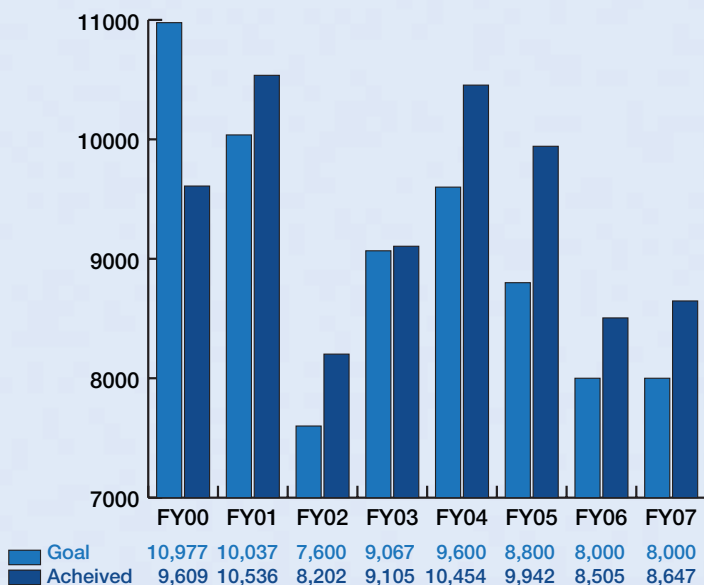
AF Reserve (Selected Reserve) Education (Enlisted)



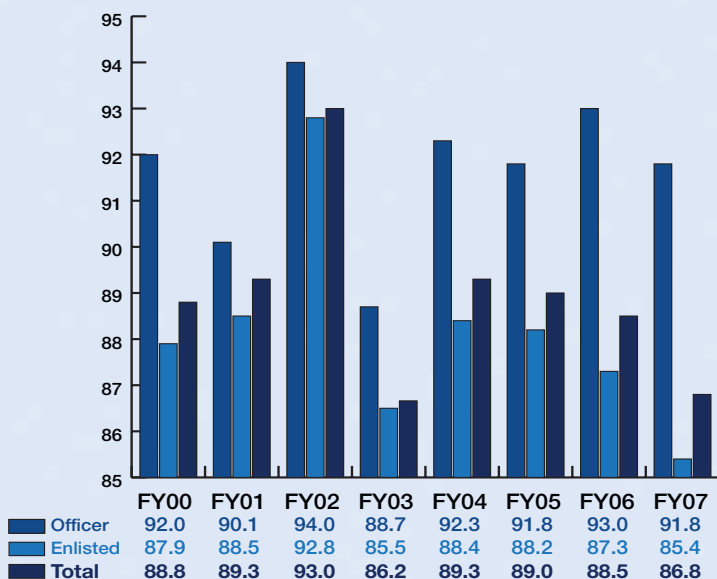
AF Reserve (Selected Reserve) Education (Officer)



AF Reserve (Selected Reserve) Recruiting



AF Reserve (Selected Reserve) Retention



How We Are Organized

Organization of the U.S. Air Force

The Department of the Air Force was created with the National Security Act of 1947. It became effective Sept. 18, 1947. On April 14, 1948, the Air Force Reserve was formally established as part of the same National Security Act which mandated the military services to revitalize their reserve programs. The Air Force consists of three components – the Regular Air Force, the Air Force Reserve, and the Air National Guard of the United States.

Air Force Management

The Headquarters of the Air Force incorporates all elements of the U.S. Air Force. It is administered by a civilian Secretary appointed by the President and is supervised by a military Chief of Staff. To ensure unit preparedness and overall effectiveness of the Air Force, the **Secretary of the Air Force** is responsible for and has the authority to conduct all affairs of the Department of the Air Force.

The Secretary's responsibilities include research and development, and any other activity assigned by the President or the Secretary of Defense. The Secretary of the Air Force exercises authority through civilian assistants and the Chief of Staff, but retains immediate supervision of activities that involve vital relationships with Congress, the Secretary of Defense, other governmental officials, and the public.

The Air Staff

The **Chief of Staff U.S. Air Force** is appointed by the President, with the consent of the Senate, from among Air Force general officers, customarily for a term of four-years. The Chief of Staff serves as a member of the Joint Chiefs of Staff and the Armed Forces Policy Council. In this capacity, the Chief is one of the military advisors to the President, the National Security Council, and the Secretary of Defense. Also, the Chief is the principal advisor to the Secretary of the Air Force on Air Force activities.

The **Chief of Staff** presides over the Air Staff, transmits Air Staff plans and recommendations to the Secretary of the Air Force, and acts as the Secretary's agent in carrying them out. The Chief is responsible for the efficiency of the Air Force and the preparation of its forces for military operations. The Chief of Staff supervises the administration of Air Force personnel assigned to unified organizations and unified and specified commands. Also, the Chief supervises support of these forces assigned by the Air Force as directed by the Secretary of Defense. In addition, the Chief of Staff has responsibility for activities assigned to the Air Force by the Secretary of Defense.

The **Chief of Air Force Reserve** is also the Commander, Air Force Reserve Command. As the Chief of Air Force Reserve he is the advisor to the Chief of Staff of the Air Force on all Reserve matters. As such he is responsible for Air Force Reserve policy, planning, budget and answering to Congress. As the Commander of Air Force Reserve Command, he is responsible for organizing, training and equipping Air Force Reserve forces.

Field Organizations

The Air Force has 11 major commands (MAJCOM), 32 field operating agencies, and five direct reporting units with subordinate elements to carry out its mission. The Air Force established **Air Force Reserve Command** as a major command in 1997.

Major commands are organized on a functional basis in the United States and on a geographic basis overseas. They accomplish designated phases of Air Force worldwide activities. Also, they organize, administer, equip, and train their subordinate elements for the accomplishment of assigned missions. Major commands generally are assigned specific responsibilities based on functions. In descending order of command, elements of major commands include numbered air forces, wings, groups, squadrons, and flights.

The Air Force Reserve is organized administratively under Air Force Reserve Command with a small contingent of personnel aligned on the Air Staff and other headquarter staffs for purposes of organizing, administering, recruiting, instructing, or training Reservists.

Air Force Reserve Command, located at Robins AFB, GA, is responsible for organizing, training, and equipping Air Force Reserve units and personnel. The command is further organized into three numbered air forces, the Air Reserve Personnel Center, and the Readiness Management Group. The Air Reserve Personnel Center, located at Buckley Air Force Base, Aurora, CO, manages personnel records for the Air Force Reserve and Air National Guard. The Readiness Management Group is responsible for the administration of Individual Mobilization Augmentees (IMAs).



The Numbered Air Force

A numbered air force (NAF) is a tactical echelon directly under an operational MAJCOM. NAFs are structured to perform an operational or warfighting mission, often oriented to a specific geographic region. A NAF is assigned operational units, such as wings, groups, and squadrons.

The Wing

A wing is a level of command below the numbered air force or higher headquarters. A wing has a distinct mission with significant scope. A wing is usually composed of a primary mission group (e.g., operations, training) and the necessary supporting groups. By pulling together the mission and support elements, a wing provides a significant capability under a single commander. It is responsible for maintaining the installation or has several squadrons in more than one dependent group. A wing may be either an operational wing, an air base wing, or a specialized mission wing. AFRC is organized into 34 wings and six groups.

Group

A group is a level of command between wings and squadrons. Groups generally bring together multiple squadrons or other lower echelon units to provide a broader capability. For instance, a mission support group pulls together several squadrons in a variety of areas to provide a full spectrum mission support capability. A group is generally a tactical echelon without significant staff support. A group usually has two or more subordinate units.

Squadron

The squadron is the basic unit in the Air Force. Squadrons are the basic “building block” organizations in the Air Force, providing a specific operational or support capability. A squadron may be either a mission unit, such as an operational flying squadron, or a functional unit, such as a civil engineer, security forces, or maintenance squadron. A squadron has a substantive mission of its own that warrants organization as a separate unit based on factors like unity of command, functional grouping and administrative control, balanced with efficient use of resources. Squadrons vary in size according to responsibility.

Flight

The flight is an Air Force unit that is smaller than a squadron. Usually organized around specific a mission or groups performing same mission. If further subdivision is required, a flight may consist of sections, then elements.

Air Force Reserve Numbered Wing /Groups

4th Air Force

March ARB, CA

349 th Air Mobility Wing	Travis AFB, CA
433 rd Airlift Wing	Lackland AFB, TX
434 th Air Refueling Wing	Grissom ARB, IN
445 th Airlift Wing	Wright - Patterson AFB, OH
446 th Airlift Wing	McChord AFB, WA
452 nd Air Mobility Wing	March ARB, CA
459 th Air Refueling Wing	Andrews AFB, MD
507 th Air Refueling Wing	Tinker AFB, OK
916 th Air Refueling Wing	Seymour Johnson AFB, NC
927 th Air Refueling Wing	Selfridge ANG Base, MI
932 nd Airlift Wing	Scott AFB, IL
940 th Air Refueling Wing	Beale AFB, CA
624 th Regional Support Group	Hickam AFB, HI
931 st Air Refueling Group	McConnell AFB, KS

10th Air Force

NAS JRB Fort Worth, TX

301 st Fighter Wing	NAS JRB Fort Worth, TX
310 th Space Wing	Schriever AFB, CO
419 th Fighter Wing	Hill AFB, UT
442 nd Fighter Wing	Whiteman AFB, MO
482 nd Fighter Wing	Homestead AFB, FL
917 th Wing	Barksdale AFB, LA
919 th Special Operations Wing	Duke Field, FL
920 th Rescue Wing	Patrick AFB, FL
926 th Group	Nellis AFB, NV
944 th Fighter Wing	Luke AFB, AZ
340 th Flying Training Group	Randolph AFB, TX
477 th Fighter Group	Elmendorf AFB, AK

22nd Air Force

Dobbins ARB, GA

94 th Airlift Wing	Dobbins ARB, GA
302 nd Airlift Wing	Peterson AFB, CO
315 th Airlift Wing	Charleston AFB, SC
403 rd Wing	Keesler AFB, MS
439 th Airlift Wing	Westover ARB, MA
440 th Airlift Wing	Pope AAF, NC
512 th Airlift Wing	Dover AFB, DE
514 th Airlift Mobility Wing	McGuire AFB, NJ
908 th Airlift Wing	Maxwell Air Force Base, AL
910 th Airlift Wing	Youngstown - Warren ARB, OH
911 th Airlift Wing	Pittsburgh IAP, PA
914 th Airlift Wing	Niagara Falls IAP, NY
934 th Airlift Wing	Minneapolis St Paul ARS, MN
413 th Flight Test Group	Robins AFB, GA

Field Operating Agencies and Direct Reporting Units

The Direct Reporting Unit (DRU) is a subdivision of the Air Force, directly subordinate to the Chief of Staff, US Air Force. A DRU performs a mission that does not fit into any of the MAJCOMs. A DRU has many of the same administrative and organizational responsibilities as a MAJCOM. A Major Command DRU is a subdivision of a MAJCOM. A MAJCOM DRU reports directly to the MAJCOM commander and performs a mission that does not fit into any of the MAJCOM's primary subordinate units.

A Field Operating Agency (FOA) is a subdivision of the Air Force, directly subordinate to a Headquarters US Air Force functional manager. A FOA performs field activities beyond the scope of any of the major commands. The activities are specialized or associated with an Air Force-wide mission, and do not include functions performed in management headquarters, unless specifically directed by a DoD authority.

Major Command FOAs apply to a subdivision of a MAJCOM. A MAJCOM FOA reports directly to a MAJCOM functional manager and performs specialized field activities beyond the scope of any of the MAJCOM's primary subordinate units. The activities are specialized and are associated with MAJCOM or theater-wide missions that transcend the scope of routine wing functions. FOA activities do not include functions performed in management headquarters unless specifically directed by DoD authority.

Force Presentation





Operationally, Air Force Reserve units and individuals are aligned with Regular Air Force units and/or missions to provide augmentation in accordance with Title 10 U.S.C. provisions. This operational alignment is often referred to as the "gaining" command or unit and refers to the Regular Air Force unit and/or command that the Reserve personnel and units will support when activated.

In an effort to accurately capture the breadth, depth, and scope of Combatant Commander requirements, the Air Force set out to define a common measure for all units of action. The simplest way to do this was to group by capabilities and count by assets.

Combat Wings depict aggregate combat power in terms of fighters, bombers, C4ISR, mobility, space, missiles, SOF, Battlefield Airmen, and Air Operations Centers. The Combat Wing is equal to the number of combat assets (aircraft, missiles, etc.) divided by the normal number of assets per squadron divided by the number of squadrons per wing.

$$\text{NUMBER OF ASSETS} \div \text{ASSETS PER SQUADRON} \div \\ \text{SQUADRONS PER WING} = \text{COMBAT WING}$$

Combat Wings represent the capability picture. After consulting the National Security Strategy and the National Military Strategy, the Air Force determined that 86 Combat Wings were the essential number needed to fully execute the mission. The Combat Wing delivers a more complete comparison between historical, current, and future demands of collective combat power for commanders by providing the necessary framework to ensure a leaner, more capable force framework, allowing combat forces the effects they need, when they need them. The added utility provided by the Combat Wing will continue to be employed in the Air and Space Expeditionary Forces (AEF) to ensure flexible, cost effective, and tailored expeditionary requirements of the Combatant Commanders.

Unit of Action to Force Presentation		
Sized for Combat Requirements		Support by:
Air Force	86 Combat Wings 	10 Air & Space Expeditionary Forces
Army	70 BCTs 	18 Divisions (about 4 BCTs per)
Marines	9 RCTs + 11 MAGs 	3 Marine Expeditionary Forces
Navy	313 Ships 	10 Carrier Strike Groups (about 6-8 ships per)

Force Integration

The United States Air Force is increasingly integrating the Air Force Reserve and Air National Guard into training, operations and deployments with Regular Component units. The primary means of doing so is “association”. At its most basic, the component unit that “owns” the equipment is called the “primary operator”, the units or members from the component(s) that are using the same equipment are called “associate” operators. In some instances the Regular component owns the equipment and the AFR or ANG units or members associate with that unit on the same equipment. In other instances, the AFR or ANG own the equipment and the other components – Regular AF, e.g., associate on that equipment.

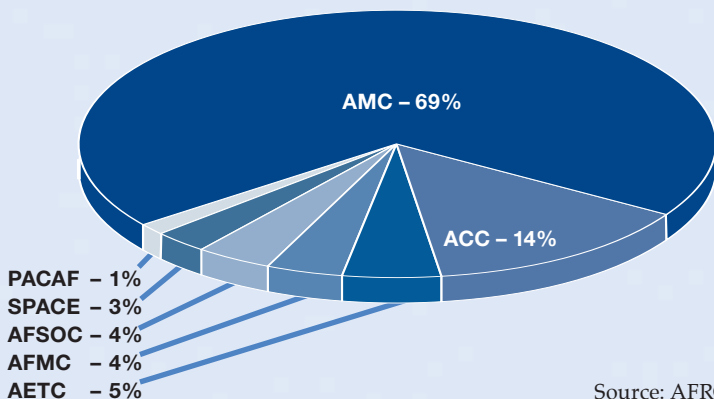
Integration improves our combat effectiveness by increasing the cross-flow of ideas among components; it generates efficiencies, and it fosters mutual respect. Moreover, integration allows the Regular AF to leverage the experience and expertise of the Reserve Components.

There are currently more than 100 integration initiatives being undertaken by the USAF.

We Are a Force Provider



AFRC is a force provider to the other Air Force Major Commands. The following percentages reflect the proportional distribution of AFR Selected Reserve to these Major Commands.



Source: AFRC

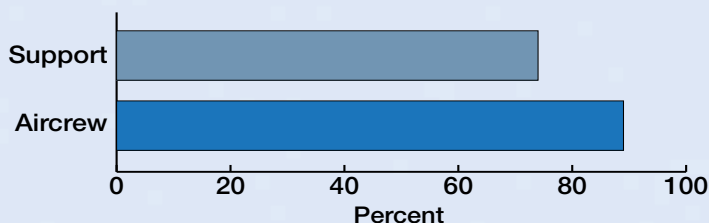
AFRC is a Cost-Effective Force Provider of Highly Experienced Airmen

In the Selected Reserve (SelRes) we have highly-experienced, dedicated Reservists trained in the same missions, on the same equipment, and to the same standards and currencies as their Regular AF counterparts, but at a fraction of the cost. And SelRes Reservists are ready to deploy within 72 hours of notification, in most mission areas.

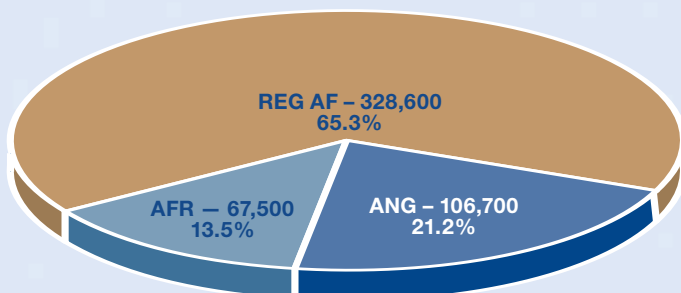
Experience in Years - Average

	Reg AF	AFRC
Officer	11	16
Enlisted	9	16

Percent of AFRC Personnel with Prior Mil Service



FY 2008 Air Force End Strength - Authorized



Selected Reserve by Component as Percentage of Total AF Military Personnel Budget

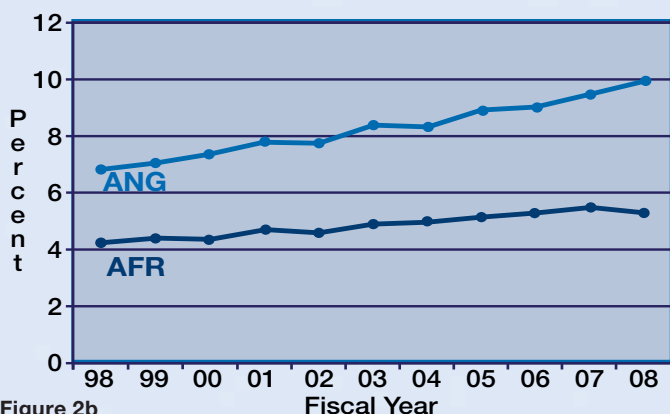


Figure 2b

Selected Reserve by Component as Percentage of Reg AF Cost per Capita

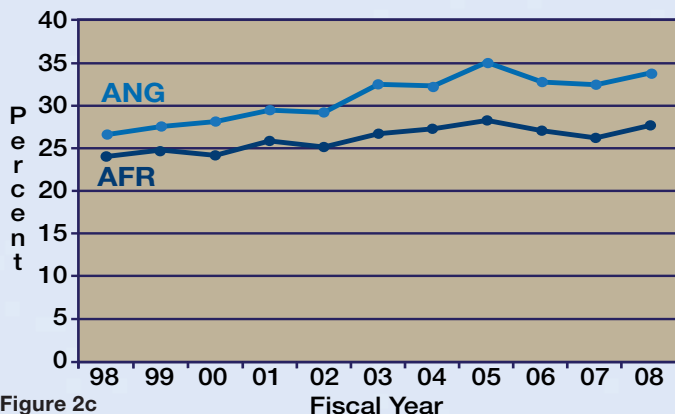


Figure 2c

Note: The source for Figures 2b-c: ABIDES (Automated Budget Interactive Data Environment System); the budget system currently in use by the Air Force and recognized as the official Air Force position with respect to the Planning, Programming and Budget Execution (PPBE) system. Cost per capita figures were derived dividing total cost of each Military Personnel program by authorized end strength for Regular AF; authorized Selected Reserve end-strength for AFR and ANG. Medicare Eligible Retirement Health Care (MERHC) is an accrual account used to pay for health care of Medicare-eligible retirees (age 65 and beyond); MERHC values were integrated in Military Personnel budgets for each component for fiscal years 2003-2005.

...AND WE HAVE BEEN ANSWERING THE CALL!

Nearly from the day it came into being the Air Force Reserve has been answering the call. The first call came in 1948 with the Soviet closing of access to Berlin. While still transitioning to new aircraft, five Air Force Reserve C-124 units, along with 5,613 Reservists, were mobilized for a year during the Berlin Airlift.

During the Korean War nearly 147,000 Air Force Reservists were ordered to active service for periods ranging from one to three years. Throughout the 1960s, 70s, and 80s the Air Force Reserve provided units and personnel in support of humanitarian, peacetime training and wartime operational missions—including the Cuban Missile Crisis, and conflicts in Vietnam, Grenada, Panama, and the Middle East.

During Operations DESERT SHIELD and DESERT STORM more than 23,000 Air Force Reservists were mobilized while another 15,000 volunteered for activation. Since then the Air Force Reserve has been performing wartime operations alongside the Regular Air Force in Operations NORTHERN and SOUTHERN WATCH and in the support of missions over Serbia and Kosovo.

When terrorists attacked the United States Sept. 11, 2001, Reservists immediately responded. Supporting Operation NOBLE EAGLE, Reserve F-16 fighters flew combat air patrols protecting America's cities, while KC-135 tanker and AWACs aircraft supported efforts with air refueling and security. Airlift, medical, and security forces also responded the same day.

In October 2001, when the United States initiated Operation ENDURING FREEDOM, Air Force Reserve MC-130 Combat Talons became the first fixed-wing aircraft to penetrate Afghani airspace, while Reserve F-16 crews, already deployed in theater for Operation SOUTHERN WATCH, performed the first combat missions. Air Force Reservists made significant contributions by flying close air support, combat delivery, rescue, strategic airlift, and air refueling missions supporting operations in Afghanistan. Efforts also included B-52s, special operations, aeromedical, security forces, and civil engineering support. Air Force Reservists are also instrumental in building the Afghan national army air corps.

When Operation IRAQI FREEDOM began in March 2003, Air Force Reserve combat-ready A-10, B-52 and F-16 aircrews flew numerous strike operations during the first hours of engagement. It is notable that because of Litening II-equipped F-16s, we flew 40 percent of the expeditionary wing's combat missions with 16 percent of the crews.

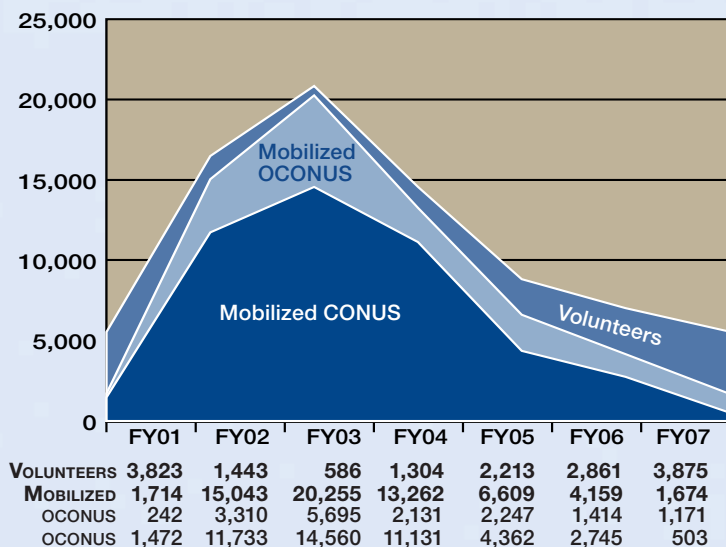
Our special operations folks served behind enemy lines during the initial phase of the campaign. Our rescue personnel were among the first into Tallil Air Base, arriving March 29. Our A-10s provided close air support around Tallil and Kirkuk Air Bases. Our tankers were part

of the lead tanker force, offloading more than 21 million pounds of fuel to more than 1,000 aircraft.

Fifteen C-17 Reserve associate crews supported a C-17 airdrop, opening up the northern front in Iraq March 26. Additionally, Reservists supported Air Force unmanned aerial vehicle missions and space-based operations in Southwest Asia, providing essential data to battlefield commanders.

During the combat phase of Operation IRAQI FREEDOM, March 19 through May 1, Air Force Reserve aircraft and crews flew nearly 162,000 hours and deployed 70 aircraft in theater; aeromedical personnel provided 45 percent of the Air Force's aeromedical crews supporting a total 3,108 patient movements.

As of January 2008, Air Force Reservists have contributed significantly to the more than 86,000 combat air support and fighter sorties, 363,500 mobility sorties, 43,000 air refueling sorties, 5.8 million troops airlifted, and 2.7 million tons delivered by the Total Force. Mobilized Air Force Reservists exceed 31,000, with many thousands continuing to volunteer to serve for extended tours of active duty since September 2001. And we have our highly experienced Reservists performing a variety of operational missions for the USAF throughout the world, on every continent.



AFR OIF-OEF-ONE Deployment (as of 30 Sep 2007)

AFRC Personnel Mobilized since 9/11: 30,326

AFRC Personnel Mobilized for > than one year: 13,906

Figure 2

Source: AFRC/A1XX

Part 2

Missions We Perform

Space

**Command and Control,
Communications, Cyberspace**

**Intelligence, Surveillance and
Reconnaissance**

Support

Flying

In reviewing each of these missions and the associated weapon systems, we ask that you ponder the following:

For all time, warfare has essentially involved three things: observing an adversary, maneuvering force, and when necessary, bringing force to bear on that adversary.

In the beginning of the 20th Century, controlled flight enabled forces to exploit the skies as a domain not limited by rivers, seas and mountains. Throughout the 20th Century, as the performance of aircraft improved, and as rocketry evolved, the speed with which, and the distance from which the United States was able to observe its adversaries and maneuver its forces dramatically increased; and the nation's ability to bring force to bear also dramatically increased in range, intensity and accuracy.

In last the decades of the 20th Century, and the first of this 21st Century, technology has evolved to the point where we fly ever higher, now in space, and can exponentially increase the speed with which and the distance from which we observe, maneuver and bring force to bear.

The United States can no longer claim distinct advantage in technology: other nations are able to operate in space; and sophisticated off-the-shelf equipment is available to anyone that can afford it. Indeed a new domain, cyberspace, is already being exploited by clever and determined, but not readily-identifiable adversaries.

The United States Air Force strives to observe, maneuver and, when necessary, strike an adversary anywhere on the globe: to provide the capabilities of global vigilance, global reach and global power. The missions and weapon systems laid out on the pages of the second part of this Handbook are the ones currently employed or about to be employed by the USAF and USAF Reserve in furtherance of these capabilities.

Finally, for all of these technological advances, warfare is still fundamentally a human endeavor, and as with most human endeavors, experience and expertise count a great deal. The Air Force Reserve is a vast repository for much of the experience and expertise in many mission areas performed by the USAF.

The Air Force has come to recognize the benefits of using all of its resources: it increasingly relies on Reservists to support operational missions throughout the world; and it is encouraging the Air Force Reserve to integrate more fully with the Regular Air Force in a whole host of missions.

Integrating Reservists makes infinite sense, and we are excited to play such an essential role in making the United States Air Force a more capable and viable military service.

Space

Satellites

Early Warning Launch and Detection

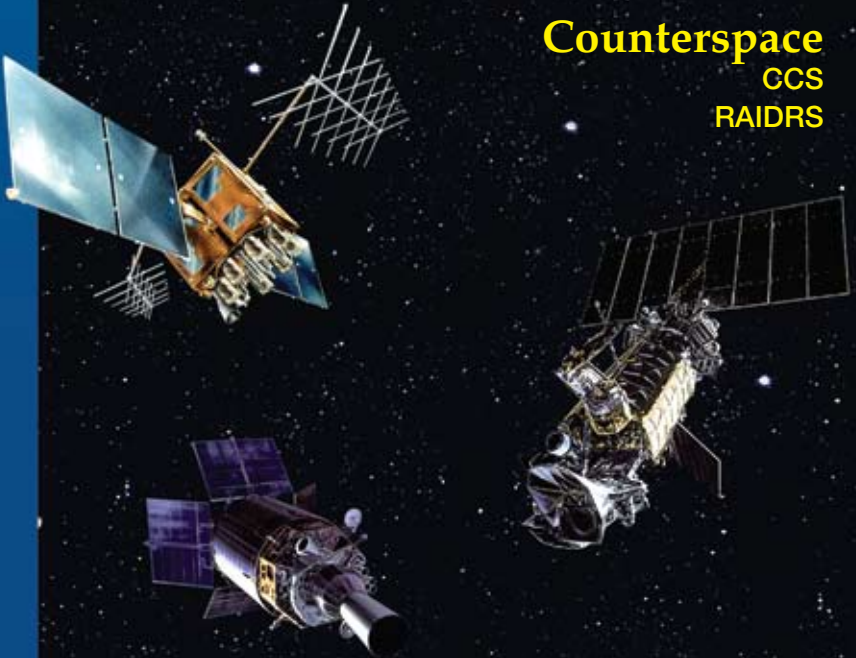
Global Positioning and Navigation

Weather

Counterspace

CCS

RAIDRS



SPACE

Space Missions

Long before any munitions hit the ground, halfway around the world, intelligence, battlespace and weather data are relayed, targeting is coordinated, and commands and guidance are transmitted over a vast array of space-enabled networks consisting of early warning launch detection, environmental monitoring, communication, and navigation satellites that make up the critical backbone of our global defense architecture. Each of these satellites is launched, monitored, controlled, and defended by Airmen on the ground at various stations located throughout the world.

Air Force Reservists are performing these tasks more than ever, and will play an increasingly important role as the Air Force looks to the Reserve to integrate these missions across the entire force, allowing Reservists to perform private sector work and serve the Air Force in a vital operational capacity from within the United States and/or overseas. In the Air Force Reserve, these missions are being performed by nearly 800 Reservists of the 310th Space Wing, as well as 862 IMAs and 14 AGRs, - all of whom support the Air Force Space Command (AFSPC).



The 310th Space Wing

The only space wing in the Air Force Reserve, is located at Schriever AFB, Colorado, and has units assigned to Schriever, Peterson and Buckley AFBs in Colorado and Vandenberg AFB, California. Its 15 units and nearly 800 Reservists support various military and other government organizations, including, but not limited to, Air Force Space Command, Air Combat Command, the Space Innovation and Development Center, 14th Air Force, 50th Space Wing, 21st Space Wing, 460th Space Wing, and the Department of Commerce. Below is a listing of each of the units that comprise the 310th SW, their missions, as well as a description of the weapons systems they operate.

6th Space Operations Squadron - Schriever AFB, CO, operates Defense Meteorological Satellite Program (DMSP) satellites in support of the Department of Defense, Department of Commerce, and the National Oceanic and Atmospheric Administration.

7th Space Operations Squadron - Schriever AFB, CO, provides support for GPS satellites through routine operations, anomaly resolution, launch and early orbit, and satellite disposal. They provide operations support for research and development satellites such as the Advanced Composition Explorer (ACE) and the Midcourse Space Experiment (MSX) satellites, and they perform booster launch operations for the Delta II. This mission is evolving to operate Multi-Mission Satellite Operations Center (SOC).

8th Space Warning Squadron - Buckley AFB, CO, operates the Space Based Infrared System (SBIRS) providing strategic and tactical early missile warning to warfighters and national leadership. There is current initiative to expand manning to support MCSB with eight full-time and 21 Unit Reservists.

9th Space Operations Squadron - Vandenberg AFB, CA, operates the Joint Space Operations Center (JSPOC) performing combat operations, plans, strategy, and intelligence assessments enabling the Commander, Joint Functional Component Command Space (JFCC SPACE) to command and control space forces by providing worldwide space effects to combatant commanders. FY08 POM Initiative to increase manning by 23 full-time, 63 Unit Reservists.

14th Test Squadron - Schriever AFB, CO, augments the 17th Test Squadron by providing independent assessments of space system operational effectiveness and suitability. They provide subject matter experts and surge capability for AFSPC testing.

19th Space Operations Squadron - Schriever AFB, CO, supports the 2nd Space Operations Squadron in the launch, sustainment, and operations and modernization of the GPS satellite constellation, providing highly accurate 24-hour navigation, timing and nuclear detonation information to users worldwide.

310th Communications Flight - Peterson AFB, CO, augments AFSPC Network Operations and Security Center (NOSC), providing command, control and situational awareness for AFSPC communications systems and assets.

310th Security Forces Squadron - Schriever AFB, CO, maintains a rapid, deployable security force to support wartime and contingency taskings as directed by HQ Air Force Reserve Command and HQ Air Force Space Command. The primary focus of the 310th SFS is to mobilize and perform air base defense operations, resource protection, weapons system security and law enforcement operations.

Detachment 1 (380th Space Control Squadron) - Peterson AFB, CO, is chartered to augment the 16th Space Control Squadron in the execution of an emerging, globally deployed hybrid counterspace/electronic warfare support mission. 380th SPCS monitors satellite communications (SATCOM) links to intercept and geolocate SATCOM jammers, sources of electromagnetic interference or other signals of interest for prosecution as targets or other higher authority action.

Operating Location B (Mission Support Group staff) - Buckley AFB, CO, is part of the 310th Space Wing preparatory capability; provides oversight and management of the other operating locations.

Operating Location C (310th Medical Squadron) - Schriever AFB, CO and Buckley AFB, CO, provides medical support to the 310th Space Wing warfighter. Services offered at both locations will be dental, aerospace medicine, EKG's, optometry, lab work and audiology support.

Operating Location D (710th Security Forces Squadron) - Buckley AFB, CO, provides critical security for Air Force Space Command (AFSPC) ground segment assets worldwide. They also augment USAF security forces units worldwide during periods of increased operations tempo.

Operating Location E (310th Mission Support Squadron) - Buckley AFB, CO, is made up of the 310th Military Personnel Flight, the 710th Communications Flight, and the 310th Services Flight, which provide mission support to the Operations Group.

HQ Reserve National Security Space Institute - Colorado Springs, CO, is part of the DoD focal point for educating space power application in Joint Warfighting. They provide surge capability through specialized traditional reserve expertise: course research, development, instruction and administer the Reserve Space Professional Development Program administration.

26th Space Aggressor Squadron (realigned to ACC) - Schriever AFB, CO, is specifically chartered to augment the 527th SAS in the replication of adversary space capabilities in support of Air Expeditionary Force spin-up, world-wide exercises, training and testing, to enhance U.S. space superiority, force readiness, and survivability.

AFRC also has 862 IMAs and 14 AGRs supporting AFSPC in a variety of missions at the following bases throughout the US: Los Angeles AFB, CA; Vandenberg AFB, CA; Onizuka AFS, CA; Malmstrom AFB, MT; FE Warren AFB, WY; Buckley AFB, CO; Peterson AFB, CO; HQ AFSPC, CO; Schriever AFB, CO; Kirtland AFB, NM; Minot AFB, ND; JSC, TX; Cape Cod AS, MA; National Reconnaissance Office, VA; Cape Canaveral AFS, FL; and Patrick AFB, FL.



MISSION

Provide early detection and warning of missile launches and nuclear explosions to National Command Authorities and operational commands. The satellite constellation has been the cornerstone of North America's early warning system for more than 30 years.



DESCRIPTION

Defense Support Program (DSP) satellites orbit the earth about 35,780 kilometers over the equator in geosynchronous orbits. They use infrared sensors to detect heat from missile and booster plumes against the earth's background.

Typically, DSP satellites were launched into geosynchronous earth orbit on a Titan IV booster and inertial upper stage combination. However, one DSP satellite was launched using the space shuttle on mission STS-44 (Nov. 24, 1991). The final DSP satellite was launched on the new Evolved Expendable Launch Vehicle Delta IV, Heavy in FY07.

CONTRACTORS

Prime: Northrop Grumman (CA)



SPECIFICATIONS

Weight: 5,250 lb. (2,386 kg)

Dimensions: *Height:* 32.8 ft. (10 m) on orbit; *Diameter:* 22 ft. (6.7 m) on orbit

Coverage: Continuous global coverage

Interoperability: Interoperable with Cheyenne Mountain Operations Center and other strategic users

AFR Units operating this equipment:

As an associate operator: 8th Space Warning Squadron (SWS) – Buckley AFB, CO; Associate unit to Reg AF's 2nd SWS (7th SOPS flies satellites during launch & early orbit, anomaly resolution, and disposal operations)

Program Status: The Defense Support Program (DSP) has completed production. Last satellite, DSP-23, was launched in 2007.

MISSION

The Space Based Infrared System's (SBIRS) primary mission is to provide initial warning of a ballistic missile attack on the United States, its deployed forces, and allies.



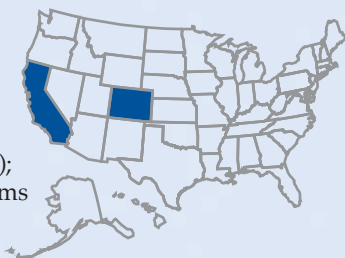
DESCRIPTION

The Space Based Infrared System High (SBIRS High) is an infrared detecting satellite system that is the follow-on to the current Defense Support Program (DSP) missile warning satellites. SBIRS consolidates the national and DoD's infrared detection systems into a single overarching architecture that fulfills the nation's security needs in the areas of missile warning, missile defense, technical intelligence, and battlespace characterization. SBIRS consists of three Geosynchronous Earth Orbit (GEO) satellites, two Highly Elliptical Orbit (HEO) payloads, a Mission Control Station and Backup, Relay Ground Stations in Europe and the Pacific, and nine mobile multi-mission processors. SBIRS enables continuous global surveillance, tracking, and targeting of multiple objects in multiple areas of responsibility, and surveillance of infrared sources of operational, intelligence, and national significance.

CONTRACTORS

Prime: Lockheed Martin Space Systems (CA)

Subcontractor(s): Northrop Grumman Electronic Systems (CA); Lockheed Martin Integrated Systems and Solutions (CO)



SPECIFICATIONS

Weight: 10,229 lb. (GEO)

Coverage: Continuous global coverage

Interoperability: Interoperable with Cheyenne Mountain Operations Center and other strategic users via the Survivable Communications Integrated System, with theater missile warning networks via the Integrated Broadcast System in Link 16 format, with ballistic missile defense BMC3 (Battle Management Command, Control and Communications), and with the Space Battle Management Core System

AFR Units operating this equipment: *As an associate operator:* 8th Space Warning Squadron (SWS) – Buckley AFB, CO; associate unit to Reg AF's 2nd SWS (Currently operating ground segment; will operate space segment upon 1st launch)

Program Status: SBIRS High is in System Development and Demonstration. Increment 1 ground segments at the Mission Control Station and Interim MCS Backup are operational and process and disseminate current DSP data. The Highly Elliptical Orbit (HEO) - 1 payload is on-orbit and currently conducting nominal operations. HEO-2 payload has been delivered to classified host for integration. GEO satellites 1 and 2 have over 90 percent of their components delivered and are in various stages of assembly, integration, and testing. Relay Ground Station-Europe was outfitted with all mission and communications equipment in 2005. The Mission Control Station Backup-HEO at Schriever AFB, CO, is in equipment fit-up and check out.

MISSION

Provide highly accurate positioning, navigation, and timing data (globally, 24 hours a day, and in any type of weather) to an unlimited number of civil users and authorized military users.



DESCRIPTION

The Global Positioning System (GPS) is comprised of three segments: space segment, control segment, and user segment. The space segment consists of 24 or more satellites in six orbital planes, traveling in semi-synchronous (12-hour) orbits around the earth. The control segment, sometimes referred to as the ground segment, consists of a Master Control Station (MCS), a Back-Up MCS (BMCS), six dedicated monitor stations, five ground antennas (four dedicated and one shared), and eight National Geospatial-Intelligence Agency (NGA) monitor stations. The user segment includes the myriad of civil and military GPS receivers used for air, land, sea, and space applications. The GPS is commanded and controlled by Air Force Space Command, 2nd Space Operations Squadron at Schriever AFB, CO.

CONTRACTORS

Prime: Block II/IIA - Boeing (CA);
Block IIR/IIRM - Lockheed Martin
(PA); Block IIF - Boeing (CA);
Block III - TBD

Subcontractors: Lockheed Martin
(PA); Harris (FL)



SPECIFICATIONS

Size: Block II/IIA - 28 launched/17 on orbit; Block IIR - 13
launched/12 on orbit; IIR-M - Three launched, three on orbit;
IIF - TBD; GPS III - TBD

Weight: II - 3,670 lb.; IIA - 4,150 lb.; IIR - 4,485 lb.; IIR-M - 4,525 lb.;
IIF - 3,566 lb.; GPS III - TBD

Coverage: Continuous global coverage

AFR Units operating this equipment: *As an associate operator:*
19th SOPS – Schriever AFB, CO; Associate unit to Reg AF's 2nd SOPS
(7th SOPS flies some satellites during launch & early orbit, anomaly
resolution, and disposal operations)

Program Status: Operational - IIRM-1 launched September 25,
2005; first IIF launch, FY08; first GPS III launch, FY13



MISSION

Provide global visible and infrared cloud cover imagery and other atmospheric, oceanographic, land surface, and space environment data to support multi-service requirements and battlespace characterization everywhere that U.S. forces operate.



DESCRIPTION

The Defense Meteorological Satellite Program (DMSP) designs, builds, launches, and maintains satellites monitoring the meteorological, oceanographic, terrestrial and solar environments. Using the DMSP data, military weather forecasters can detect developing patterns of weather and track existing weather systems over remote areas, including the presence of severe thunderstorms, dust storms, hurricanes, and typhoons. This data is vital to the effective employment of forces and weapon systems worldwide. The program includes five satellites flying in two sun-synchronous orbits. The primary weather sensor on DMSP is the Operational Linescan System, which provides continuous visual and infrared imagery of cloud cover over an area 1,600 nautical miles wide. Additional satellite sensors measure atmospheric vertical profiles of moisture and temperature, sea surface winds, and the presence of soil moisture. The DMSP satellites also measure space environment charged particles and electromagnetic fields to assess the impact of the ionosphere on ballistic-missile early warning radar systems, electrical grids, satellite operations, and long-range communications.

CONTRACTORS

Prime: Spacecraft - Lockheed Martin (CA); Sensors - Northrop Grumman (MD)

Subcontractors: Sensor - Northrop Grumman (CA); Flight Software Independent Verification and Validation (IV&V) - Integral Systems, Inc. (MD)



SPECIFICATIONS

Weight: 2720.1 lbs.

Range: Polar-orbiting at 450 nautical miles (NM)

Dimensions: 14.1 ft. long (4.29 m) without solar panels deployed

Coverage: Full global coverage every 12 hours

Capacity/Satellite: Launched on a medium Evolved Expendable Launch Vehicle

Interoperability: Air Force Weather Agency ensures DMSP data is interoperable with a broad range of user platforms.

Compatibility: Air Force Weather Agency ensures DMSP data is compatible with a broad range of user platforms.

Program Status: All DMSP satellites have been delivered, but not all DMSP satellites have launched

AFR Units operating this equipment: 6th SOPS – Schriever AFB, CO in conjunction with the National Oceanic and Atmospheric Administration

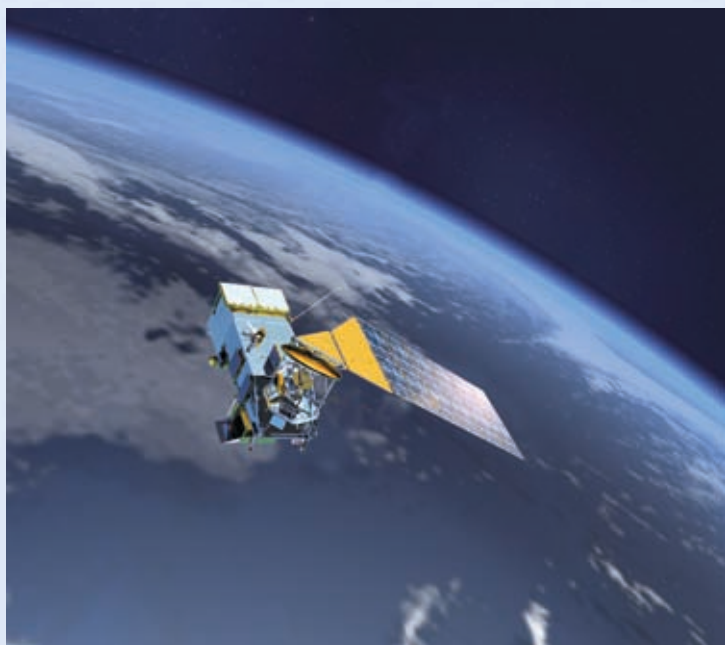
Current Inventory: 5 satellites

Future Upgrades: All DMSP satellites have been delivered.

National Polar-Orbiting Operational Environmental Satellite System (NPOESS)

MISSION

Provide military commanders and civilian leaders with assured, timely, high-quality global weather and environmental information to effectively employ weapon systems and protect national resources.



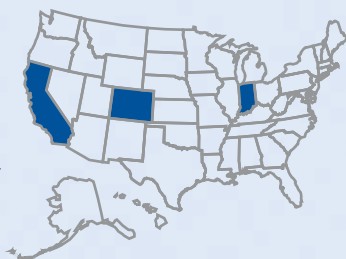
DESCRIPTION

The National Polar-orbiting Operational Environmental Satellite System (NPOESS) is a tri-agency program (DoD, Department of Commerce, and NASA) that will be the nation's primary source of global weather and environmental data for operational military and civil use for at least 10 years. NPOESS will fly a suite of instruments that will provide visible and infrared cloud-cover imagery and other atmospheric, oceanographic, terrestrial, and space environmental information. In all, NPOESS will measure environmental parameters such as soil moisture, cloud levels, sea ice, ozone, and more.

CONTRACTORS

Prime: Northrop Grumman Space Technology (CA)

Subcontractor(s): Raytheon (CA); Ball Aerospace (CO); Instruments - ITT Industries (IN)



SPECIFICATIONS

Size: Four-satellite constellation

Weight: 14,498 lbs. (max)

Coverage : Global; Low Earth Polar Sun synchronous orbit-two-orbit planes with four-hour revisit capability (with reliance on the European Meteorological Operational (MetOp) satellite in third orbit)

AFR Units to operate this equipment: This system is not yet on line; AFR units to be determined.

Program Status: Engineering and Manufacturing Development (EMD)



MISSION

Protect friendly space-related capabilities from enemy attack or interference and prevent adversaries from using their space capabilities against us.



DESCRIPTION

The Counterspace Systems program is designed to meet current and future military space control needs. It supports acquisition of both the Offensive Counterspace and Defensive Counterspace systems. A current project within this program is the Counter Communications System (CCS). This is an offensive electronic warfare system designed to disrupt adversary satellite-based communications using reversible, nondestructive means. Other projects include the Rapid Attack Identification Detection and Reporting System (RAIDRS) and Command and Control elements that are required to execute counterspace missions. RAIDRS is a defensive counterspace system designed to detect, report, identify, locate, and classify attacks against U.S. military space assets.

CONTRACTORS

Prime: CCS - Harris Corp. (FL);
Rapid Attack Identification
Detection and Reporting System,
first phase (Block 10) - Integral
Systems, Inc. (MD)



SPECIFICATIONS

Coverage: CCS and Deployable RAIDRS elements are transportable via C-130. RAIDRS will have worldwide coverage. CCS will provide coverage within the Joint Operating Area where it is deployed.

Interoperability: Interoperable with all space control assets

AFR Units operating this equipment: *As an associate operator:* Detachment 1 (380th Space Control Squadron), 310th Space Wing - Peterson AFB, CO; associated with Reg AF's 16th Space Control Squadron

Program Status: Three additional Block 10 CCS systems procured in FY06/07. Block 20 system in pre-acquisition risk reduction. RAIDRS: Block 10 system in development.

Current Inventory: CCS: Three Block 10 systems delivered, currently undergoing capability upgrades





C4

Command and Control

TBMCS

Falconer AOC

Communications

EC&I

GBS

Cyberspace

C4



Command & Control

The quantity of information available in the information age provides us with many choices; the key is to make the right choice. To do so we need the right information, at the right time, in a way that is understandable and usable.

In our daily lives, we all experience times when we are inundated and overloaded with information - it can be paralyzing. The hyper-capabilities of USAF and Department of Defense communication and information systems and complexities of warfare compound this problem.

The USAF employs systems which enable commanders to manage complex flows of massive amounts of information so that the commanders can plan the right mix of assets and better orchestrate the execution of campaign plans at all levels of conflict, in all operational environments. These systems are the Theater Battle Management Control System (TBMCS) and Falconer Air and Space Operations Center (AOC).

The Air Force Reserve provides two units of highly trained, highly experienced professionals specialized in utilizing these systems: The 710th Combat Operations Squadron – Langley AFB, VA, and the 701st Combat Operations Squadron – March AFB, CA.

MISSION

Provide the Joint Forces Air Component Commander (JFACC) the means to plan, direct, and control all theater air operations during peacetime, exercise, and wartime environments.



DESCRIPTION

Theater Battle Management Control Systems (TBMCS) is the Combat Air Force information and decision support system supporting combined and joint air operations for the Joint Forces Air Component Commander (JFACC).

TBMCS Force Level (FL) refers to the Headquarters elements of an operating command, Numbered Air Force, Unified Command or Joint Task Force, to create and execute a battle plan conducted at an Air and Space Operations Center-Weapon System (AOC WS). TBMCS is the Joint System of Record for exchanging/facilitating air battle planning and intelligence operations and executions with participating services and allies.

TBMCS Unit Level (UL) refers to the wings and squadrons that take direction from FL to carry out the battle plan. TBMCS UL Operations (OPS) and UL Intel are both wing level command and control (C2) systems. UL OPS is used to control and monitor unit level operations during wartime, contingencies, and exercises. UL Intel is used to analyze taskings specified in the Air Tasking Order (ATO) and maintain base-level real-time intelligence support to the AOC, as well as the targeting and mission planning communities.

CONTRACTORS

Prime: Lockheed Martin
Integrated Systems & Solutions (CO)



SPECIFICATIONS

Interoperability: TBMCS is an integrated command and control (C2) system which provides standardized, secure, automated decision support for Air Force, Joint, and Allied commanders worldwide. The system is specifically designed to interface with C2 systems from the US Army, Navy, Marines, and selected Allied/Coalition Nations. TBMCS provides automated air operations planning, execution management and intelligence capabilities. It supports a full range of functions including: Air Tasking Order (ATO)/Airspace Control Order (ACO) production and re-planning; threat assessment; target selection; mission execution; battle damage assessment; resource management; time critical target identification and prosecution; and defensive planning. It also supports interaction with subordinate/command units for mission execution. It provides a capability to obtain resource information, and to plan and execute the next day's missions. TBMCS has in-garrison and deployable configurations.

AFR Units operating this equipment: *As an associate operator:* 710th Combat Operations Squadron – Langley AFB, VA; 701st Combat Operations Squadron – March AFB, CA.

Program Status: ACAT IAC; Fielding FL Sp 1.1.3, UL Ops Sp 8.5N, UL Intel Sp 10.0

Future Upgrades: Force Level – Spiral 1.1.4: Integration with collaboration tools; Consolidated database for planning/execution; Reduction of decision support process cycle times; Decision quality information; Automate capability to support integrated air and space effects-based dynamic strategy development and assessment; Net ready compliance; Unit Level Ops – Spiral 8.5N, 9: Unit to Force interoperability (unit contract information services); Ops to Intel interoperability (alert, MISREP added to Intel web page); Map Edit capability; Web-based air crew sortie scheduling viewing; Automated Report Generator; Unclassified UL Ops; Web enabled base map with geospatial and Geobase capability; Client Windows XP O/S migration; Unit Level Intel – Spiral 10: Migration to GCCS-I3 Disconnected Operations; Leverage TBMCS FL 1.1.4 web services; Migration to Common Geopositioning Services (CGS) from Raindrop & Raindrop Extension as part of the TAW solution; Windows XP Professional Operating System

AN/USQ-163 Falconer Air and Space Operations Center Weapon System (AOC-WS)

MISSION

Provide Joint/Combined Force Air Component Commander's (JFACC/CFACC's) primary tool for commanding air and space power.



DESCRIPTION

The AN/USQ-163 Falconer Air and Space Operations Center Weapon System (AOC-WS) is the senior element of the Theater Air Control System. The JFACC/CFACC uses the system for planning, executing and assessing theater-wide air and space operations. The AOC-WS develops operational strategy and planning documents. It also disseminates tasking orders, executes day-to-day peacetime and combat air and space operations, and provides rapid reaction to immediate situations by exercising positive control of friendly forces.

CONTRACTORS

Prime: Lockheed Martin
Integrated Systems & Solutions
(VA, MA)

Subcontractors: IBM (VA, MA);
L3 (VA, MA); SAIC (VA); DRC
(VA, MA); ISS (VA, MA)



SPECIFICATIONS

Size: Each AOC-WS is sized to support its mission; Averages: 1,000–2,000 people; 70,000 square ft. of space.

Interoperability: Interoperates using Internet Protocol (IP) and tactical data networks with Joint and Coalition Command and Control (C2) units at various command levels. Receives ISR data from various sources at various classification levels. Air Tasking Orders and Airspace Control Orders are disseminated to air bases throughout the theater. AOC receives and processes situation awareness data from tactical units to enable the prosecution of time-sensitive targets.

AFR Units operating this equipment: *As an associate operator:* 710th Combat Operations Squadron – Langley AFB, VA; 701st Combat Operations Squadron – March AFB, CA.

Program Status: Fielding Increment 10.1; Pre-Milestone B for Increment 10.2

Future Upgrades: Increment 10.2: Net Ready Compliance, Improved Collaboration, Joint Air Operations Plan and Joint Air Execution Plan linked to assessment; Reduction of decision support process cycle times; Decision quality information; Automate capability to support integrated air and space effects-based dynamic strategy development and assessment; Effectively deconflict airspace in Air Tasking Order planning and execution; C2 Constellation Net capabilities to manage, protect, and exchange information with joint, allied, and coalition military and civil nodes; Standard common data model and IM strategy to enable data association and information persistence and sharing within and beyond the AOC WS; Integrated system and management of network resources; Integrated automated support for IPB for air and space operations planning; Improved coalition interoperability; Information and functionality sharing.

Mission

The mission of EC&I forces is to provide operational commanders with communication capabilities throughout the full spectrum of conflict and non-conflict operations. EC&I forces support air operations by enabling command and control (C2), intelligence, logistics, medical, and other mission support functions from initial deployment through redeployment. The objective is to communicate information rapidly, accurately, and securely to achieve interoperability between deployed AF, joint, and coalition elements throughout the theater and reachback C2 centers. EC&I forces deploy in two force module types:

Open the Air Base Force Module: provides the capability to receive air cargo and passengers, protect the force, and maintain initial C2 regardless of the follow-on mission or aircraft type. Under this module, EC&I forces establish an infrastructure to C2 and mission area processing by first establishing an initial center to provide limited EC&I services, and then expanding the infrastructure to provide EC&I services at three additional enclaves. Currently fielded equipment provides the following capabilities:

- Unclassified/classified network
- Reachback to CONUS via Satellite Communications
- Limited Network Control Center functionality
- Land Mobile Radio infrastructure
- Telephone Trunks
- Initial ground-to-air networks
- Expeditionary giant voice
- Global Broadcast System
- EC&I command and equipment accountability

Force Providers: Total Force has 40 Combat Communication units that provide this capability; Air Force Reserve has four of these units:

35th Combat Communications Squadron - Tinker AFB, OK;
55th Combat Communications Squadron - Robins AFB, GA;
349th Communications Squadron - Travis AFB, CA; and
514th Communications Flight - McGuire AFB, NJ

Robusting the Air Base Force Module: provides the capabilities required to equip the airbase for indefinite operation and mitigate risks maintained by keeping earlier force modules "light and lean."

This type module provides the following communications capabilities:

- Robust Network Control Center (Help Desk, Network Services, etc.)
- Expand Satellite Communications: increase bandwidth, assure connectivity

- Engineering and Installation forces transition base to fixed-like infrastructure
- Robust Multimedia Functions
- Client support for offices throughout the Air Expeditionary Wing

Force Providers: Currently, Air Force Reserve provides 10 wing deployable communications units to provide robust communications in theater. By FY2011, that number will increase to 22 wing deployable communications units.

Units currently tasked with the “robust the base” mission:

452 nd Communications Squadron	March AFB, CA
482 nd Communications Squadron	Homestead ARS, FL
301 st Communications Flight	Fort Worth NAS JRB, TX
302 nd Communications Flight	Peterson AFB, CO
440 th Communications Flight	Pope AFB, NC
911 th Communications Flight	Pittsburgh IAP ARS, PA
914 th Communications Flight	Niagara Falls ARS, NY
916 th Communications Flight	Seymour Johnson AFB, NC
934 th Communications Flight	Minneapolis-St. Paul IAP, MN
944 th Communications Flight	Luke AFB, AZ

Other units that will be tasked by 2011:

419 th Communications Squadron	Hill AFB, UT
434 th Communications Squadron	Grissom ARB, IN
94 th Communications Flight	Dobbins ANGB, GA
403 rd Communications Flight	Keesler AFB, MS
433 rd Communications Flight	Lackland AFB, TX
439 th Communications Flight	Westover ARB, MA
442 nd Communications Flight	Whiteman AFB, MO
445 th Communications Flight	Wright-Patterson AFB, OH
459 th Communications Flight	Andrews AFB, MD
507 th Communications Flight	Tinker AFB, OK
908 th Communications Flight	Maxwell AFB, AL
910 th Communications Flight	Youngstown ARS, OH
917 th Communications Flight	Barksdale AFB, LA

MISSION

Provide global broadcast of high-volume, high-speed information to deployed forces.



DESCRIPTION

The Global Broadcast Service (GBS) is a communications broadcast service that simultaneously broadcasts imagery, video, and data information to multiple dispersed users using small receive terminals. The GBS uses payloads on two DoD satellites plus commercial leases over the continental United States (mandatory) and Europe (augmentation). Three fixed primary injection points and two mobile injection points uplink broadcasts to satellites.

CONTRACTORS

Prime: Raytheon Intelligence & Information Systems (VA)

Subcontractors: Raytheon Technology Services (VA); Chelton Microwave (MA); GTSI (VA); Viasat (MD)



SPECIFICATIONS

Size: Number existing: two military payloads augmented by commercial leases

Future: Operations over five Wideband Global SATCOM (WGS) system satellites

Coverage: Global Coverage: 65° N–65° S

Capacity/Satellite: Maximum data rate: 24 Mbps

AFR Units operating this equipment: 35th CCS - Tinker AFB, OK; 55th CCS - Robins AFB, GA; 349th CS - Travis AFB, CA; and 514th CF - McGuire AFB, NJ.

Program Status: Milestone II - 1QFY98; Initial Operational Capability 1 - 1QFY04; Beyond Low-Rate Initial Production (BLRIP) - 2QFY07. GBS is transferring to Wideband Global SATCOM (WGS) satellites once available for use.



Between and among the hardware U.S. forces operate on the ground, on the sea, in the air, and in space is a domain which is absolutely critical and inseparable from our national power and interests, known as cyberspace. More than the internet, it is the electromagnetic spectrum within which electronic data is stored, modified and exchanged via electromagnetic systems, networks and associated physical infrastructures.

In cyberspace, the constraints of distance, space and time are reduced, both for us and our enemies. Superiority of this domain is a prerequisite for all military operations, and for freedom of action in all other domains. Should adversaries deny this domain to U.S. military operations, they could take away battlespace (situational) awareness, command and control, and precision strike capability, - leaving our exquisite, 21st- Century capabilities paralyzed.

The Air Force aims to ensure our forces have freedom of action within this domain, and that it has the ability to deny freedom of action to our adversaries; to that end it has recently established a major command known as Air Force Cyber Command (Provisional).

As it does in other domains, the Air Force will rely on highly skilled, technically oriented Reservists to make critical contributions to this major command. Air Force Reservists are already dedicated to mission areas akin to the missions likely to be subsumed into the Air Force Cyber Command.

The 310th Communications Flight – Peterson AFB, CO provides augmentation support for the Space Command Integrated Network Operations and Security Center (INOSC); the 622nd Communications Flight – Langley AFB, VA provides augmentation support for the ACC INOSC; and the 917th Communications Flight – Barksdale AFB, LA provides augmentation support for the Air Force Network Operations and Security Center (AFNOSC), the temporary home of the (Provisional) AF Cyber Command. There are currently over 300 Reservists throughout AFRC supporting Network Operations and Security Centers and Network Control Centers.

In addition, 610th Intelligence Flight – Offutt AFB, NE and the 710th Intelligence Flight – Brooks AFB, TX provide monitoring and analysis of unsecured DOD Telecommunications systems to include telephone, radio, facsimile or computer-to-computer communications.



Intelligence, Surveillance and Reconnaissance

AF DCGS

AFWWS

ISR

Intelligence, Surveillance and Reconnaissance (ISR) provides warfighters with information on the constantly changing battlespace. ISR must be available at all echelons within the joint warfighting force. In order to achieve this goal, ISR requires the ability to employ manned and unmanned, air, space, surface and subsurface sensors to develop and maintain an accurate picture of the battlespace. Ultimately, the goal is to provide a comprehensive understanding of the battlespace in time, space and effect, regardless of the adversary, location, opposition, weather, or time of day.

Since 9-11, there have been radical changes in the nature of the threat our forces face today. The threat today, and for the foreseeable future, is asymmetric, unpredictable and more deadly. In view of the new threat environment, more persistent ISR capabilities are needed to ensure sufficient battlefield awareness to support dispersed collaborative operations. This change in the nature of the threat is the thrust of the emerging missions in ISR.

Commanders and decision makers at all levels rely on predictive actionable intelligence, based on timely, pertinent and accurate information. Today, more than ever, Air Force intelligence relies heavily upon the Air Force Reserve Components' intelligence personnel to meet the ever-growing intelligence requirements. Comprised of Guard and Reserve unit personnel and IMAs, the Reserve Component intelligence force provides approximately 40 percent of the overall Air Force intelligence capability. Over half of the Air Reserve Component intelligence capability resides within the Air Force Reserve IMA program. The Air Force Reserve unit and IMA force is roughly 1,900 strong – with expertise in all of the intelligence disciplines.¹

Over the last 5 years, 930 of the Air Force Reserve IMA and unit intelligence force have deployed for a total of 95,954 days. Ninety-five percent of these deployments were OCONUS. For the foreseeable future, Reserve intelligence personnel will continue to be deployed throughout the AOR, engaged in operations ranging from intelligence support to fighter, airlift, and tanker missions to ISR operations in Combined Air Operations Centers (AOCs).

The Air Force Reserve intelligence force also supports Special Operations and Rescue forces on the ground. Their efforts in the collection, processing, exploitation and dissemination of critical intelligence at the operational and tactical levels of war directly resulted in the capture of suspected insurgents/terrorists and the protection of our coalition force.

Approximately 70 percent of the airborne Reserve intelligence linguist capability is resident in the 97th Intelligence Squadron at

¹ Intelligence disciplines include Imagery Intelligence (IMINT), Geospatial Intelligence (GEOINT), Signals Intelligence (SIGINT), Human Intelligence (HUMINT), and Measurements and Signatures Intelligence (MASINT)

Offutt AFB, NE—and has been mobilized or deployed over the past two years. Approximately 33 Reserve airborne linguists are engaged in reconnaissance operations on the RC-135 (see p. 114). The remaining linguist capability is engaged in document exploitation, interpretations for Special Operations Forces, coalition security forces, and Iraqi security forces on the ground. Their dynamic assessment of on-going enemy operations has enabled US forces to thwart enemy efforts to engage us at the time and place of their choosing.

Air Force Reserve intelligence support to the warfighter does not reside in OCONUS locations exclusively. With today's state of the art technology readily available, Reserve intelligence professionals are able to support other mission areas of the Global War on Terrorism (GWOT) from CONUS locations, to include:

- Reserve unit intelligence force dedicated to ensuring combat readiness of intelligence personnel through certification in weapon systems engaged in GWOT
- Reserve unit intelligence force ushering a new technological era in intelligence support to advanced weapon systems like our F-22 unit in Alaska and the F-35 in the future.
- AFSOC-assigned Reservists operate the ISR processing, exploitation, and dissemination (PED) enterprise that serves as the lifeline to deployed Special Operations Forces.
- National Geospatial Agency Reserve analysts ensure delivery of geospatial intelligence to the last tactical mile for the GWOT by forging critical alliances with Joint Forces Command and Strategic Command
- Defense Intelligence Agency Reserve force dedicated to monitoring Iraqi perception of our operations on their and identifying opportunities for counter propaganda against al-Qaeda operatives throughout Iraq.
- COCOM-assigned IMAs operate daily from Joint Reserve Intelligence Centers located throughout the U.S. and are major producers of intelligence products in support of counter-terrorism operations.

The Air Force Reserve has also been a key partner in the ISR Total Force Integration.

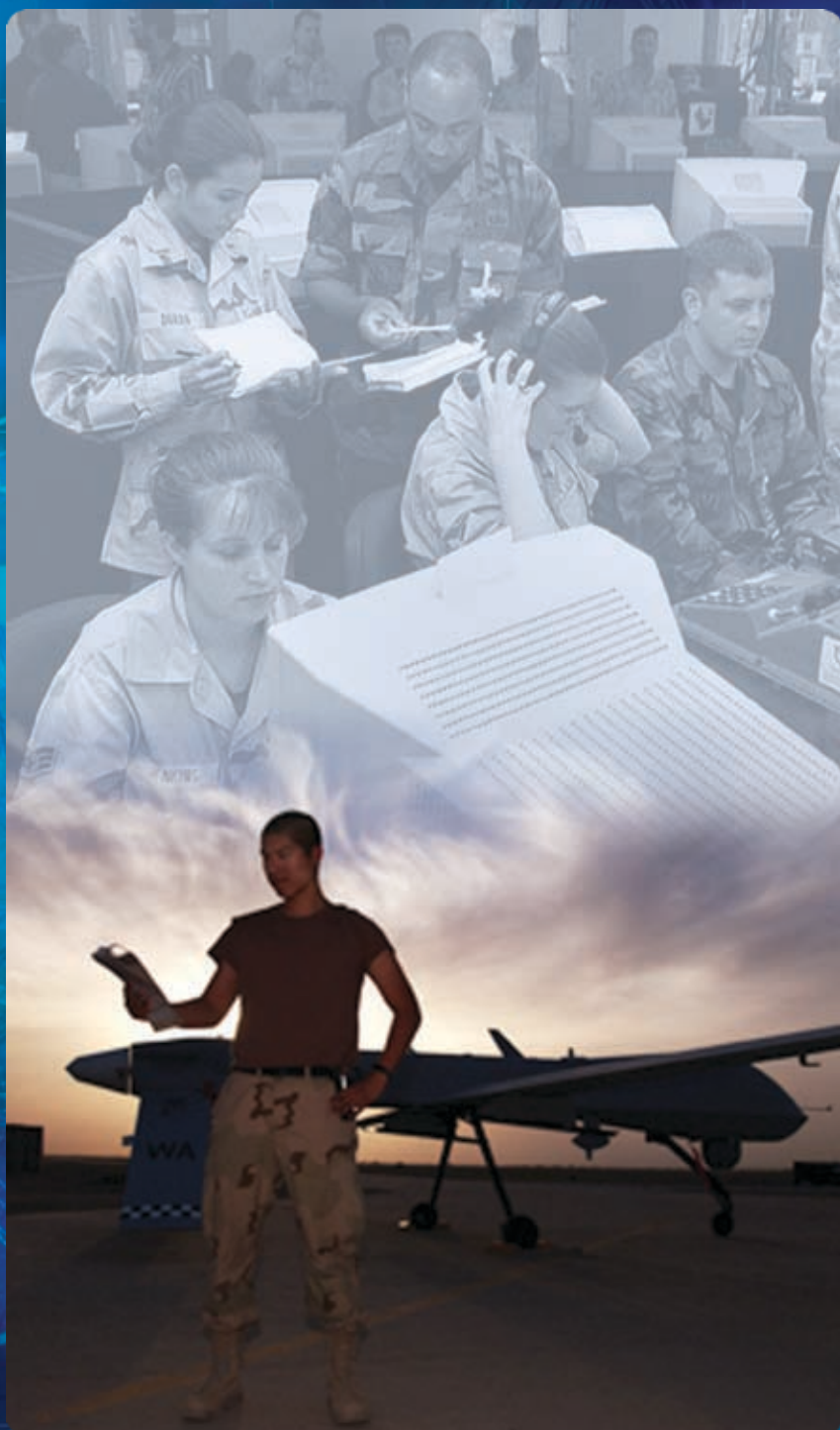
Since 2004, there has been a significant increase in the role of the Air Force Reserve in emerging ISR missions. The Air Force Reserve Command has established Reserve presence in PREDATOR (see p. 116), GLOBAL HAWK (see p. 118) and Distributed Common Ground System (DCGS) operations through the establishment of Reserve Associate Units in the three mission areas:

Intelligence, Surveillance and Reconnaissance

- GLOBAL HAWK: 13th Reconnaissance Squadron - Beale AFB, CA
- PREDATOR: 78th Reconnaissance Squadron - Nellis/Creech AFB
- DGS-2: 50th Intelligence Squadron - Beale AFB, CA

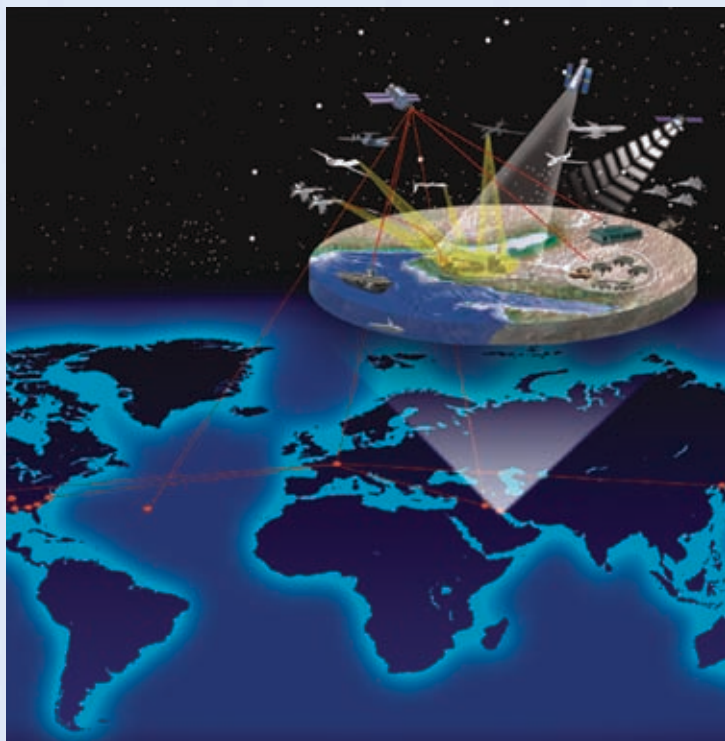
The establishment of these units represents a significant milestone in the Air Force's evolution of strategic, operational and tactical capabilities that meet the emerging battlefield challenges. Furthermore, these units are innovative ways to ease the demands placed on Reservists in the current "operational Reserve" environment, allowing the Reservists to support the war effort from their respective home station – reach-back/push-forward capability.





MISSION

Collect, process, exploit, and disseminate data, information, and intelligence from Intelligence, Surveillance and Reconnaissance (ISR) sensors such as the U-2, Global Hawk, Predator, and others.

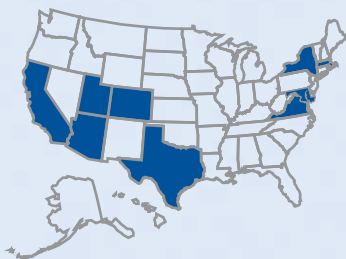


DESCRIPTION

The AN/GSQ-272 Air Force Distributed Common Ground System (AF DCGS) is a network-centric weapon system capable of tasking ISR sensors and receiving, processing, exploiting, and disseminating data and information from airborne, national, and commercial platforms and sensors. This weapon system consists of numerous Active Duty, Air National Guard, and mission-partner sites, interconnected by a robust communications structure that enables collaborative reachback ISR operations. AF DCGS operators correlate collected imagery intelligence, signals intelligence, and measurement and signatures intelligence data to provide decision-quality information directly to the Joint Task Force and below, including significant support to time-critical targeting operations.

CONTRACTORS

Prime: Raytheon (TX, CA, VA); Lockheed Martin (AZ, CO); L-3 Communications (UT); Goodrich (MA); Northrop Grumman (MD); General Dynamics (VA); BEA (NY); BAE (CA); Kodak (NY)



SPECIFICATIONS

Range: Worldwide via datalink relay and satellite

Coverage: Worldwide via reachback operations

Size: Active Duty core locations: Langley AFB, VA; Beale AFB, CA; Hickam AFB, HI; Ramstein AB, Germany; Pacific Air Forces. Air National Guard (ANG) locations: Wichita, KS; Birmingham, AL; Little Rock, AR; Reno, NV. Other worldwide locations.

Interoperability: U-2, Global Hawk, Predator, and other ISR platforms/sensors; DoD DCGS architecture; intelligence community systems; national intelligence databases; theater communications systems and datalinks; DCGS Integration Backbone; Common Imagery Processor

AFR Unit operating this weapon system: *As an associate:* 50th Intelligence Sq –Beale AFB, CA

Program Status: Sustainment

Future Upgrades: Upgrading to 10.2 configuration



MISSION

Provide our Nation's forces with essential air and space environmental intelligence to ensure battlespace awareness and decision superiority.



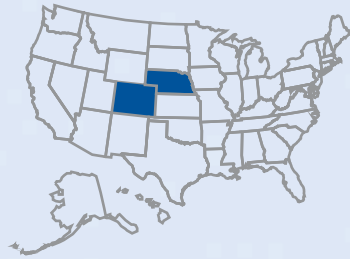
DESCRIPTION

The Air Force Weather Weapon System (AFWWS) provides capabilities for the five core processes of AF weather operations: ground-based terrestrial and ground-based space observing capabilities (Collect), analysis and forecasting tools for terrestrial and space weather phenomena (Analyze and Predict), the capability to prepare tailored weather and weather effects information for the warfighter (Tailor), and the capability to integrate weather into planning and execution decision-making processes to enhance all aspects of readiness, deployment, employment, sustainment and redeployment/reconstitution (Integrate). The AFWWS, which consists of both software and hardware, is a system-of-systems which principally supports the Joint Functional Concepts of Battlespace Awareness and Joint Command and Control.

CONTRACTORS

Prime: Northrop Grumman (NE)

Subcontractors: Raytheon (NE);
National Center for Atmospheric
Research (CO)



SPECIFICATIONS

Coverage: Worldwide fielding of fixed and tactical meteorological equipment supporting Joint, Air Force, and Army operations.

Interoperability: Machine-to-human (M2H) interoperability via Uniform Resource Locator-based web services at various classification levels, and limited machine-to-machine (M2M) interoperability with warfighter systems via legacy interfaces and through use of new Joint Meteorological and Oceanographic Broker Language (JMBL) standards.

AFR Units operating this equipment: *As associate units:* The 5th Operational Weather Flight - Shaw AFB, SC, provides weather support for the 9th AF AOC and CENTCOM operations, and ACC when activated. The 12th Operational Weather Flight - Scott AFB, IL, augments the 15th Operational Weather Squadron and supports the AF Weather Agency when activated.

As IMAs: 56 weather officer and enlisted IMAs provide weather support at the NAF and MAJCOM HQ levels.

Program Status: Various

Future Upgrades: Use of the Joint Environmental Toolkit (JET) and standard Joint METOC Broker Language (JMBL) will enable common network-centric interfaces to C4I systems for direct M2M, M2H and human-to-human integration and exploitation of weather information by warfighters and decision makers at all levels of operations.





Support

Services

Security Forces

Medical Service

Civil Engineers

RED HORSE

Aerial Port

Aircraft Loading Systems

SUPPORT



All missions require the support of a team of dedicated professional Airmen from a wide range of specialties, all of whom bring a great deal of experience and expertise to the fight. What follows are some of the specialties and the equipment that the Air Force Reserve employ to make the mission happen.



Services

The Air Force Reserve has over 1,100 Services personnel in uniform (1,084 Unit Reservists, 17 AGRs) providing a full range of base services including: contingency food service, mortuary affairs, lodging, and fitness support. They also provide Honor Guard support at locations throughout the United States. The AF Reserve provides over 18 percent of the Air Force Services capability. These personnel bring a wealth of expertise needed to fulfill critical deployment taskings worldwide. The AF Reserve also provides combat training for Regular, Air National Guard, and AF Reserve Services personnel through its instructors in the 951st Reserve Support Squadron at Dobbins ARB, GA.



AFR Units Assigned:

94 th	Services Squadron	Dobbins ARB, GA
439 th	Services Squadron	Westover ARB, MA
440 th	Services Squadron	Pope AFB, NC
482 nd	Services Squadron	Homestead ARB, FL
910 th	Services Squadron	Youngstown – Warren ARS, OH
911 th	Services Squadron	Pittsburgh ARS, PA
914 th	Services Squadron	Niagara Falls ARS, NY
934 th	Services Squadron	Minneapolis-St. Paul ARS, MN
301 st	Services Flight	Fort Worth NAS JRB, TX
302 nd	Services Flight	Peterson AFB, CO
315 th	Services Flight	Charleston AFB, SC
403 rd	Services Flight	Keesler AFB, MS
419 th	Services Flight	Hill AFB, UT
433 rd	Services Flight	Lackland AFB, TX
434 th	Services Flight	Grissom ARB, IN
442 nd	Services Flight	Whiteman AFB, MO
445 th	Services Flight	Wright-Patterson AFB, OH
446 th	Services Flight	McChord AFB, WA
452 nd	Services Flight	March ARB, CA
459 th	Services Flight	Andrews AFB, MD
507 th	Services Flight	Tinker AFB, OK
514 th	Services Flight	McGuire AFB, NJ
604 th	Services Flight	March ARB, CA
610 th	Services Flight	Fort Worth NAS JRB, TX
622 nd	Services Flight	Dobbins ARB, GA
908 th	Services Flight	Maxwell AFB, AL
916 th	Services Flight	Seymour Johnson AFB, NC
917 th	Services Flight	Barksdale AFB, LA
919 th	Services Flight	Eglin Auxiliary Field 3, FL
927 th	Services Flight	Selfridge ANGB, MI (MacDill AFB FY08)
932 nd	Services Flight	Scott AFB, IL
939 th	Services Flight	Portland IAP, OR (closing FY08)
940 th	Services Flight	Beale AFB, CA
944 th	Services Flight	Luke AFB, AZ

Security Forces

Air Force Reserve security forces consist of approximately 2,800 unit Reservists belonging to more than 45 security force organizations and 1,300 individual mobilization augmentees (IMAs) assigned to Regular Air Force units and staffs around the World. They are organized to perform the following missions:

- Train for wartime mobilization
- Provide peacetime contingency support to active-duty units
- Provide day-to-day security forces and force protection support for Reserve installations and resources
- Conduct weapons training and readiness activities for Reserve personnel



In recent years, the Air Force Reserve's security force squadrons have expanded beyond the traditional role of primarily training in peacetime. Every year, hundreds of Reserve security force personnel provide thousands of man-days supporting the peacetime and contingency missions of nearly every major Air Force command. This expanded role has been beneficial to the Reservists in terms of increased experience and knowledge and it has been critical to the Regular Air Force in meeting ever-increasing combatant command requirements with fewer resources.

AFRC SF Units

SFS Squadrons:

94 th SFS	Dobbins ARB, GA
301 st SFS	NAS JRB Fort Worth, TX
302 nd SFS	Peterson AFB, CO
310 th SFS	Schriever AFB, CO
315 th SFS	Charleston AFB, SC
349 th SFS	Travis AFB, CA
403 rd SFS	Keesler AFB, MS
419 th SFS	Hill AFB, UT
433 rd SFS	Lackland AFB, TX
434 th SFS	Grissom ARB, IN
442 nd SFS	Whiteman AFB, MO
439 th SFS	Westover ARB, MA
445 th SFS	Wright-Patterson AFB, OH
446 th SFS	McChord AFB, WA
452 nd SFS	March ARB, CA
459 th SFS	Andrews AFB, MD
482 nd SFS	Homestead ARS, FL
507 th SFS	Tinker AFB, OK
512 th SFS	Dover AFB, DE
514 th SFS	McGuire AFB, NJ
610 th SFS	NAS JRB Fort Worth, TX
908 th SFS	Maxwell AFB, AL
910 th SFS	Youngstown ARS, OH
911 th SFS	Pittsburg IAP-ARS, PA
914 th SFS	Niagara Falls IAP-ARS, NY
916 th SFS	Seymour-Johnson AFB, NC
917 th SFS	Barksdale AFB, LA
919 th SFS	Eglin Fid #3 (Duke Field), FL
927 th SFS	Selfridge ANGB, MI (MacDill AFB FY08)
934 th SFS	Pope AFB, NC
940 th SFS	Beale AFB, CA
944 th SFS	Luke AFB, AZ

SFS Sections (Associate Units):

920 th MSS/SF	Patrick AFB, FL
931 st MSF/SF	McConnell AFB, KS
932 nd MSS/SF	Scott AFB, IL
939 th MSS/SF	Portland IAP, OR (closing FY08)

The Air Force Reserve Medical Service is committed to providing the best trained, clinically astute medical force ready to deploy at a moment's notice to support the Air Force mission. This medical mission is actualized through four constructs: first, is providing a global Aeromedical Evacuation Staging system (ASTS, CASF); second is ensuring enroute support takes casualties to the same or higher level of care (CCATT); third is ensuring force readiness and generation (AMDS/F, MDS, BOS); and fourth is providing Air Force Theater Hospitals (ATH). All of this is accomplished with 5,816 airmen distributed throughout 61 units.



The Aeromedical Evacuation Staging system is at the core of the AFRC mission providing 65 percent of the entire AF Medical Systems' staging capability. Units are designated as Aeromedical Evacuation Staging Squadrons or Flights (ASTS/F) based on size. These are the airfield medical teams, equipment and facilities set up on or near the ramp to perform such duties as collecting mass casualties, conducting triage, or preparing wounded for air transport.

Out of these units come Contingency Aeromedical Evacuation Staging Facilities (CASFs) which can be deployed to anywhere in the world. These facilities are a dedicated staging capability and resuscitative surgical options to support critical casualties at risk of becoming unstable. They are staffed with Critical Care Air Transport Teams (CCATT - 1 emergency or intensive care physician, 1 critical care nurse and 1 respiratory therapist), mental health professionals, doctors, nurses, medical technicians, pharmacists, and administrative personnel ready to care for our wounded in deployed locations or in response to natural disasters and prepare them for aeromedical evacuation to a higher level of care as warranted.

Currently CCAT teams are deployed throughout the world bringing the intensive care unit to the battlefield and caring for our most seriously

wounded during transport/on the aircraft. CCAT teams compliment the aeromedical evacuation teams described on page 104.

The Aerospace Medicine Squadron/Flight (AMDS/F) and Medical Squadron (MDS) ensure forces are medically ready. They are key to any Base Operating Support (BOS) package. Staffed with flight surgeons, optometrists, dentists, nurses, x-ray technicians, medical technicians, and administrators they ensure the wing's medical requirements for deployment are met. They do physicals, give immunizations, consult with Line of Duty issues, and track the health of our members. They are the building block of medical readiness for all Air Force Reserve personnel. Because of them, AF statistics for medical readiness surpass the other services.

The last construct, the Air Force Theater Hospital, is dedicated to enroute medical support. They are employed at critical airlift hubs to both stage casualties and provide resuscitative surgical and critical care. These portable hospitals are set up to provide state of the art care in austere environments around the world.

AFR Medical Organizations

Groups

349 th MDG	4 th AF	Travis AFB, CA
433 rd MDG	4 th AF	Lackland AFB, TX
452 nd MDG	4 th AF	March AFB, CA
932 nd MDG	4 th AF	Scott AFB, IL

Squadrons

349 th AMDS	4 th AF	Travis AFB, CA
349 th ASTS	4 th AF	Travis AFB, CA
433 rd AMDS	4 th AF	Lackland AFB, TX
433 rd ASTS	4 th AF	Lackland AFB, TX
433 rd MDS	4 th AF	Lackland AFB, TX
434 th AMDS	4 th AF	Grissom ARB, IN
445 th AMDS	4 th AF	Wright-Patterson AFB, OH
445 th ASTS	4 th AF	Wright-Patterson AFB, OH
446 th AMDS	4 th AF	McChord AFB, WA
446 th ASTS	4 th AF	McChord AFB, WA
452 nd AMDS	4 th AF	March ARB, CA

Medical Service

452 nd ASTS	4 th AF	March ARB, CA
459 th AMDS	4 th AF	Andrews AFB, MD
459 th ASTS	4 th AF	Andrews AFB, MD
507 th MDS	4 th AF	Tinker AFB, OK
624 th ASTS	4 th AF	Hickam AFB, HI
752 nd MDS	4 th AF	March ARB, CA
916 th AMDS	4 th AF	Seymour Johnson AFB, SC
927 th ASTS	4 th AF	Selfridge AFB, MI (MacDill AFB FY08)
927 th AMDS	4 th AF	Selfridge AFB, MI (MacDill AFB FY08)
932 nd AMDS	4 th AF	Scott AFB, IL
932 nd ASTS	4 th AF	Scott AFB, IL
932 nd MDS	4 th AF	Scott AFB, IL
939 th MDS	4 th AF	Portland IAP, OR (closing FY08)
940 th AMDS	4 th AF	Beale AFB, CA
301 st MDS	10 th AF	Fort Worth NAS JRB, TX
419 th MDS	10 th AF	Hill AFB, UT
442 nd MDS	10 th AF	Whiteman AFB, MO
482 nd MDS	10 th AF	Homestead ARB, FL
701 st MDS	10 th AF	Fort Worth NAS JRB, TX
710 th MDS	10 th AF	Offutt AFB, NE
917 th MDS	10 th AF	Barksdale AFB, LA
919 th MDS	10 th AF	Eglin AFB, FL
920 th ASTS	10 th AF	Patrick AFB, FL
926 th MDS	10 th AF	New Orleans NAS, LA
944 th ASTS	10 th AF	Luke AFB, AZ
944 th MDS	10 th AF	Luke ARB, NM
94 th ASTS	22 nd AF	Dobbins ARB, GA
302 nd ASTS	22 nd AF	Peterson AFB, CO
315 th AMDS	22 nd AF	Charleston AFB, SC
403 rd ASTS	22 nd AF	Keesler AFB, MS
439 th AMDS	22 nd AF	Westover ARB, MA
439 th ASTS	22 nd AF	Westover ARB, MA

440 th MDS	22 nd AF	Gen Mitchell IAP/Pope AFB, NC
512 nd AMDS	22 nd AF	Dover AFB, DE
514 th AMDS	22 nd AF	McGuire AFB, NJ
514 th ASTS	22 nd AF	McGuire AFB, NJ
622 nd ASTS	22 nd AF	Robbins AFB, GA
908 th ASTS	22 nd AF	Maxwell AFB, AL
910 th MDS	22 nd AF	Youngstown ARS, OH
914 th ASTS	22 nd AF	Niagara Falls IAP/ARS, NY
934 th ASTS	22 nd AF	Minneapolis-St Paul IAP/ARS, MN

Flights

724 th ASTF	4 th AF	Andersen AFB, GU	
931 st AMDF	4 th AF	McConnel AFB,	
310 th AMDF	10 th AF	Buckley Field, CO	Active in 2008
477 th AMDF	10 th AF	Elmendorf AFB, AK	Active in 2008
610 th AMDF	10 th AF	Langley, VA	Active in 2008
926 th AMDF	10 th AF	Nellis AFB, NV	Active in 2008
943 rd AMDF	10 th AF	Davis Monthan AFB, AZ	

Civil Engineers

The Air Force Reserve has over 4,100 Civil Engineer personnel supporting wartime taskings world-wide. These personnel provide critical skills in facility and utility system construction, maintenance, and repair; rapid runway repair; and base operating support. They manage force bed down, operations and maintenance, and base recovery operations. In addition, they provide crash rescue and fire suppression, emergency management, and explosive ordnance disposal assistance. Reserve Civil Engineer personnel bring exceptional skill and experience to the fight, using skills perfected in their civilian careers to enhance their support to the warfighter.



AFR Units Assigned:

94 th	Civil Engineer Squadron	Dobbins ARB, GA
301 st	Civil Engineer Squadron	Fort Worth NAS JRB, TX
302 nd	Civil Engineer Squadron	Peterson AFB, CO
315 th	Civil Engineer Squadron	Charleston AFB, SC
349 th	Civil Engineer Squadron	Travis AFB, CA
403 rd	Civil Engineer Squadron	Keesler AFB, MS
419 th	Civil Engineer Squadron	Hill AFB, UT
433 rd	Civil Engineer Squadron	Lackland AFB, TX
434 th	Civil Engineer Squadron	Grissom ARB, IN
439 th	Civil Engineer Squadron	Westover ARB, MA
440 th	Civil Engineer Squadron	Pope AFB, NC
442 nd	Civil Engineer Squadron	Whiteman AFB, MO
445 th	Civil Engineer Squadron	Wright-Patterson AFB, OH
446 th	Civil Engineer Squadron	McChord AFB, WA
452 nd	Civil Engineer Squadron	March ARB, CA
459 th	Civil Engineer Squadron	Andrews AFB, MD
477 th	Civil Engineer Squadron	Elmendorf AFB, AK
482 nd	Civil Engineer Squadron	Homestead ARB, FL
507 th	Civil Engineer Squadron	Tinker AFB, OK
512 th	Civil Engineer Squadron	Dover AFB, DE
514 th	Civil Engineer Squadron	McGuire AFB, NJ
624 th	Civil Engineer Squadron	Hickam AFB, HI
804 th	Civil Engineer Squadron	Elmendorf AFB, AK
908 th	Civil Engineer Squadron	Maxwell AFB, AL
910 th	Civil Engineer Squadron	Youngstown-Warren ARS, OH
911 th	Civil Engineer Squadron	Pittsburgh ARS, PA
914 th	Civil Engineer Squadron	Niagara Falls ARS, NY
916 th	Civil Engineer Squadron	Seymour Johnson AFB, NC
917 th	Civil Engineer Squadron	Barksdale AFB, LA
919 th	Civil Engineer Squadron	Eglin Auxiliary Field 3, FL
927 th	Civil Engineer Squadron	Selfridge ANGB, MI (closing FY08)
931 st	Civil Engineer Squadron	McConnell AFB, KS
932 nd	Civil Engineer Squadron	Scott AFB, IL
934 th	Civil Engineer Squadron	Minneapolis-St. Paul ARS, MN
939 th	Civil Engineer Squadron	Portland IAP, OR (closing FY08)
940 th	Civil Engineer Squadron	Beale AFB, CA
944 th	Civil Engineer Squadron	Luke AFB, AZ
628 th	Civil Engineer Flight	Dobbins ARB, GA
810 th	Civil Engineer Flight	Fort Worth NAS JRB, TX
904 th	Civil Engineer Flight	March ARB, CA

RED HORSE

Air Force Reserve **Rapid Engineer Deployable Heavy Operational Repair Squadron Engineers (RED HORSE)** teams provide 540 highly trained personnel for deployment world-wide in support of contingency operations. RED HORSE teams are mobile, rapidly deployable, and self sufficient and are employed to accomplish bare base construction, force bed down, heavy facility and airfield damage repair, and heavy engineering operations. The high demand for RED HORSE forces in Southwest Asia has led to the call for additional RED HORSE units to be established by the Air Force Reserve with new units planned for Seymour Johnson AFB and Charleston AFB, bringing the total number of Reserve RED HORSE units to five. Reserve Civil Engineer personnel bring exceptional skill and experience to the fight, often using skills perfected in their civilian careers to enhance their wartime capabilities.



AFR Units Assigned:

307 th RED HORSE Squadron	Barksdale AFB, LA
555 th RED HORSE Squadron	Nellis AFB, NV
556 th RED HORSE Squadron (relocating to Hurlburt Field, FL in FY09)	Lackland AFB, TX
560 th RED HORSE Squadron (planned for FY09)	Charleston AFB, SC
567 th RED HORSE Squadron (planned for FY09)	Seymour Johnson AFB, NC

The USAF operates airports all over the world, at both permanent and austere locations. At most bases, a dedicated unit known as an Aerial Port Squadron ensures passengers and cargo are properly processed, secured, loaded, unloaded and manifested. These units also pack and rig loads and parachutes for airdrop operations. They often work on crowded, busy ramps; in inclement weather. With aircraft engines running and props turning, the work can be hazardous. Rapid and precise execution is critical to the timely movement of aircraft and the success of a mission.

The Air Force Reserve operates many mobility aircraft, and accordingly has many, highly experienced professional aerial port squadrons that perform this mission worldwide. They are:

AFR Units:

25 th APS	Maxwell AFB, AL
26 th APS	Lackland AFB, TX
27 th APS	Minneapolis-St Paul IAP ARS, MN
30 th APS	Niagara Falls IAP ARS, NY
32 nd APS	Pittsburgh IAP ARS, PA
35 th APS	McGuire AFB, NJ
36 th APS	McChord AFB, WA
38 th APS	Charleston AFB, SC
39 th APS	Peterson AFB, CO
41 st APS	Keesler AFB, MS
42 nd APS	Westover ARB, MA
44 th APS	Andersen AFB, GU
45 th APS	Travis AFB, CA
46 th APS	Dover AFB, DE
48 th APS	Hickam AFB, HI
49 th APF	Grissom ARB, IN
50 th APS	March ARB, CA
53 rd APS	Pope AFB, NC
55 th APS	Travis AFB, CA
56 th APS	March ARB, CA
58 th APS	Westover ARB, MA
67 th APS	Hill AFB, UT

69 th APS	Andrews AFB, MD
70 th APS	Homestead ARB, FL
71 st APS	Langley AFB, VA
72 nd APS	Tinker AFB, OK
73 rd APS	Fort Worth NAS JRB, TX
74 th APS	Lackland AFB, TX
76 th APS	Youngstown-Warren ARS, OH
80 th APS	Dobbins ARB, GA
81 st APS	Charleston AFB, SC
82 nd APS	Travis AFB, CA
85 th APS	Hanscom AFB, MA
86 th APS	McChord AFB, WA
87 th APS	Wright-Patterson AFB, OH
88 th APS	McGuire AFB, NJ
94 th APS	Robins AFB, GA
96 th APS	Little Rock AFB, AR
919 th LRS/LGR	Eglin AFB, FL
920 th LRF	Patrick AFB, FL



HALVORSEN (Formerly Next Generation Small Loader [NGSL])

MISSION

Provide “high reach” cargo off-load and up-load.



DESCRIPTION

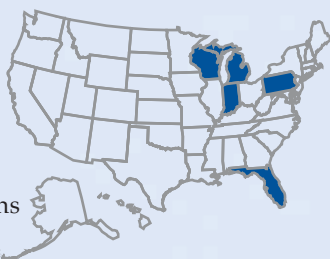
The Halvorsen loader is Air Mobility Command's newest Material Handling Equipment (MHE) acquisition. It is a self-propelled, diesel-powered, air- and surface-transportable, 25,000-pound capacity, loading/off-loading vehicle. It will augment and ultimately replace existing 25,000-pound loaders and the remaining Wide Body Elevator Loaders (WBELs) through attrition, and will be part of the 463L pallet material handling system. The Halvorsen loader is C-130 deployable and able to function in austere operating locations. It will transport cargo (463L pallets, airdrop platforms, rolling stock, and containers) and interface with the full spectrum of military and civilian cargo aircraft. It is a Non-Developmental Item (NDI) procurement – modified version of the Australian Truck Aircraft Side Loading Unit (TASLU).

CONTRACTORS

Prime: FMC Technologies Inc. (FL)

Subcontractors: Deck Welding -
Johnstown Welding & Fabrication
(PA); Engine - Detroit Diesel (MI);

Transmission - Allison Transmissions
(IN); Front Axle - Dana Corporation
(IN); Hydraulic Cylinders - Clover
Hydraulics (WI)



SPECIFICATIONS

Weight: Approx 32,000 lb. (C-130 deployment limitation)

Range: 3,500 nautical miles (NM)

Dimensions: *Transport:* Length: 355 in.; Width: 109 in.; Height: 94 in. *Operation:* Length: 355 in.; Width: 170 in.; Height: 94 in.

Speed: 17 mph on level surface (fully loaded)

Payload: 25,000 lb. (3 pallets)

Other Specifications: Deck Height: 39 in. to 18.5 ft.

Program Status: Currently, production through Aug 07: 24 per year; projected inventory – 394. FY07 & FY08 GWOT Submission for 39 additional loaders.

AFR Units operating this equipment: Andrews AFB, MD; Fort Worth NAS JRB, TX; Dobbins ARB, GA; Eglin AFB, FL; Grissom ARS, IN; Hanscom AFB, MA; Homestead ARB, FL; Keesler AFB, MS; Lackland AFB, TX; March ARB, CA; Niagara Falls IAP ARS, NY; Maxwell AFB, AL; Minneapolis-St. Paul ARS, MN; Peterson AFB, CO; Pittsburgh IAP ARS, PA; Pope AFB, NC; Westover ARB, MA; Youngstown-Warren ARS, OH.

Current Inventory: 22 (36 by 2008)

Future Upgrades: Cab cooling and auto lube on 93 loaders. These modifications already accomplished on the remainder of the fleet, to include loaders on the assembly line.

MISSION

Provide single-system cargo loading, off-loading, and transport between warehouses and aircraft.



DESCRIPTION

The Tunner 60K Loader has a total loading capacity of 60,000 pounds. It will replace older 40,000-pound capacity loaders in the Air Force inventory. The Loader can carry up to six cargo pallets at once, drive on and off C-5 and C-17 aircraft, and load and unload cargo from all military and commercial cargo aircraft. Other advantages of the Loader include an improved turning radius, higher top speed, and mechanized rollers that greatly enhance the loading and unloading process. The Loader is five times more reliable than its predecessors and 150 to 350 percent more capable.

CONTRACTORS

Prime: DRS Technologies, Inc. (MO)
(Formerly Systems & Electronics, Inc)

Subcontractor(s): Hydraulics - Linde
Hydraulics (OH); Castings - Carondelet
Foundry (MO); Engine - Detroit
Diesel (MI); Hydraulic Cylinders -
Commercial Intertech (MN);
Hydraulic fittings, hoses - Parker Hanifin (OH); Wheel hubs -
Fairfield Manufacturing (OH)



SPECIFICATIONS

Weight: Approx 65,000 lb.

Dimension: *Transport:* Length - 591 inches, Width - 111 inches,
Height - 94 inches; *Operation:* Length - 591 inches, Width - 171
inches; Height - 94 inches

Deck Height: 39 in. to 18.5 ft.

Speed: 23 mph (governed)

Payload: 60,000 lb. (6 pallets)

Bases at which AFR Airmen operate this equipment: Dobbins
ARB, GA; Lackland AFB, TX; March ARB, CA; Westover ARB, MA;
Youngstown-Warren ARS, OH

Program Status: Sustainment; delivery completed 31 Mar 05

Current Inventory: 12

Future Upgrades: None



Flying

Hurricane Hunters

Aerial Spray

Fire Fighting

Combat Search and Rescue

Aeromedical Evacuation

Airborne C2, ISR

Air Mobility

Aerial Refueling

AirLift

Air Combat

Aircraft

Acquisition, Targeting & Reconnaissance Systems

Armament

Flight Test and Depot Mx

Flight Training

USAFA Cadet Airmanship

Undergraduate Pilot Training

Advanced Flight Training

Navaid /Procedures Flight Insp

FLYING

Flying Missions

More than any other mission area, flying aircraft reflects our heritage and represents the majority of what we still do and will continue to do well into the future. The Air Force Reserve boasts some of the most experienced pilots and aircrews in the Air Force.

Still, a successful flying mission requires the integrated and sustained commitment of Airmen from many career fields, not just that of aviators. As illustrated in previous sections, flying missions are greatly enhanced by and in many cases dependent upon a global architecture of satellites, communication and information systems.

Moreover, for every mission that is launched, there are support Airmen that make sure the mission requirements are identified, orders cut, flight plans filed, aircraft fueled, cargo or munitions loaded, air space coordinated, survival equipment preflighted, flight meals prepared, ground transportation provided, aircraft secured, and that all of these efforts are communicated and controlled.



Of these, our Air Force Reserve maintainers deserve special mention. Like many Reservists, they are among the most experienced and best in the business; they add significantly to overall Air Force capability. Many of our maintainers have toiled on these same aircraft for years and take great pride in keeping their aircraft the best maintained in the business. And this pride is quite evident: when an aircrew member, Regular, Reserve or Guard, steps to one of these cleaned-and-polished, mission-ready birds, there is no doubt it has been maintained by a Reservist. Said one crewmember, "Seeing that clean aircraft, knowing it's well taken care of, - that's a great feeling."

Our maintainers know more than any the Herculean effort it takes to keep our seriously aging fleet mission ready and flying. Fleet modernization and recapitalization are top priorities for the Air Force Reserve.

The following pages highlight a remarkable array of missions and the equipment we use to make these missions happen.



MISSION

Primary Function: Weather reconnaissance. The WC-130 Hercules is flown exclusively by the Air Force Reserve Command to collect high-density, high-accuracy weather data. The primary mission is hurricane reconnaissance with a secondary mission of winter storm reconnaissance. WC-130 aircrews penetrate tropical cyclones and hurricanes at altitudes ranging from 500 to 10,000 feet (151.7 to 3,033.3 meters) above the ocean surface depending upon the intensity of the storm. This vital information is instantly relayed in realtime via satellite to the National Hurricane Center to aid in the accurate forecasting of hurricane movement and intensity. The hurricane reconnaissance area includes the Atlantic Ocean, Caribbean Sea, Gulf of Mexico, Eastern and Central Pacific Ocean. The winter storm mission is typically flown at altitudes of 30,000-34,000 ft releasing as many as 20-40 weather instruments per mission as dictated by the mission requirement. The winter storm mission is flown in the Atlantic, Gulf of Mexico and Central Pacific in order to provide more accurate atmospheric data for computer models used in forecasting significant winter storm events.



DESCRIPTION

The WC-130 Hercules is a modified version of the C-130 transport configured with computerized weather instrumentation. It is equipped with two external 1,400 gallon (5,320-liter) fuel tanks. An average mission lasts 11 hours and covers almost 3,500 miles while the crew collects and reports weather data every 30secs. The WC-130 is capable of staying aloft nearly 15 hours.

The WC-130 is equipped with two specialized weather data collection workstations. The Aerial Reconnaissance Weather Officer (ARWO) operates the main data collection/communication equipment. It consists of a data collection computer, which receives data from aircraft sensors through the aircraft data buss, satellite communications equipment and the Stepped Frequency Microwave Radiometer (SFMR) system. The Advanced Vertical Atmospheric Profiling System (AVAPS) is operated by the Loadmaster.

The weather collection system provides high-density, high-accuracy horizontal atmospheric sensing capability. Sensors installed on the aircraft measure outside temperature, humidity, absolute altitude of the

aircraft, pressure altitude, flight level wind speed and direction, and surface wind speed once per second. This information, along with an evaluation of other meteorological conditions, turbulence, icing, radar returns and visibility, is encoded by the onboard meteorologist and transmitted by satellite to the National Weather Services' National Hurricane Center in Miami, Fla. The AVAPS system measures the atmosphere vertically by using an expendable instrument which is dropped from the aircraft. The 16 inch-long cylinder is dropped within the eyewall and eye of tropical cyclone and at predefined points depending upon the mission profile. A vertical atmospheric profile of pressure, temperature, humidity, barometric pressure, GPS based wind speed and direction is received from the dropsonde as it descends to the ocean surface. The dropsonde is slowed and stabilized by a small parachute. From this information, the dropsonde system operator analyzes and encodes data for satellite transmission to the National Hurricane Center. The WC-130 is also newly equipped with the Step Frequency Microwave Radiometer instrument (SFMR) which directly measures wind speeds and rainfall rate on the ocean surface, once per second, from the altitude the aircraft is flying. This new data is used by the National Hurricane Center to accurately measure and determine surface wind fields which lead to enhanced warnings for the public and emergency managers.

The WC-130B became operational in 1959, the E model in 1962, followed by the H model in 1964. The WC-130J replaced the WC-130H in 2005.

CONTRACTORS

Contractor: Lockheed Aircraft Corp.

SPECIFICATIONS

Power Plant: Four Rolls Royce AE 2100D3 turboprops

Propellers and Avionics: Smith Aerospace (US and UK)

Height: 38 feet, 10 inches (11.9 meters)

Maximum Length: 97 feet, 9 inches (29.3 meters)

Takeoff Weight: 155,000 lbs. (69,750 kilograms)

Wingspan: 132 feet, 7 inches (39.7 meters)

Ceiling: 28,000 feet with 42,000 lbs. payload

Endurance: Can stay aloft 15 hours at 300-plus mph

Range: 4,000 miles (3,478 nautical miles)

Speed: 417 mph (Mach .059, 362 ktas at 22,000 feet hour)

Crew: Five: pilot, co-pilot, navigator, aerial reconnaissance weather officer and dropsonde system operator

Date Deployed: 1999

Unit Cost: Approximately \$ 48.5 million (1998 dollars)

Inventory: 10

AFR Units Operating this Equipment: The WC-130 is flown exclusively from Keesler Air Force Base, MS, by the 53rd Weather Reconnaissance Squadron, an AFRC organization known as the Hurricane Hunters.

Mission

The Department of Defense tasks the Air Force Reserve's 910th Airlift Wing, located at Youngstown-Warren Air Reserve Station, Ohio, to maintain an aerial spray capability. The 910th AW is home to the only full-time, fixed-wing aerial spray unit within the Defense Department.



DESCRIPTION

The 757th Airlift Squadron of the 910th AW is dedicated solely to the aerial spray mission and conducts aerial spray missions throughout the year at various military installations and their surrounding communities. The 757th employs entomologists, specially trained technicians, and four C-130H aircraft specially-modified with the Modular Aerial Spray System (MASS). These MASS modified C-130 aircraft are used to spray pesticides to control insect populations such as mosquitoes, sand fleas, and filth flies. The systems are also used to control vegetation growth on military ranges and disperse oil spills. The 910th AW is host to one of only four EPA-approved Training Centers for DoD Pesticide Applicator Certification; this course was recently offered in Italy and Germany to serve the overseas DoD pest management community.

For the past 35 years aerial spray missions have been developed and used by the AFR throughout the world to control black fly infestations at Ft. Drum, NY, an outbreak of Eastern Equine Encephalitis in the Panama Canal Zone, control mosquitoes in Guam, Japanese beetles in the Azores, gypsy moths in New York and New Jersey, biting midges in South Carolina, and grasshoppers in Idaho. Spray missions have also been used to control mosquito infestations in the wakes of Hurricanes Hugo, Andrew and Floyd.

During the months of September and October 2005, the states of Louisiana, Mississippi, and Texas were prime breeding ground for mosquitoes and filth flies in the aftermath of Hurricanes Katrina and Rita. The 757th Airlift Squadron of the 910th Airlift Wing deployed to Duke Field, Fla., from which it conducted aerial spray missions over 2,880,662 acres, or 4,501 square miles of Louisiana and Texas—an area equivalent in size to the state of Connecticut. This was the largest aerial spray mission ever conducted. For its efforts, the Centers for Disease Control and Prevention awarded the 910th AW the National Center for Infectious Diseases Recognition Award in 2006.

The aerial spray mission was conducted by the 4500th Aerial Spray Flight (Regular AF) until 1973, when it was transferred to 355th Tactical Airlift Squadron, Lockbourne (later Rickenbacker) AFB, OH (AFRES). Upon deactivation of the 355th TAS in 1982, the mission transferred to 356th Tactical Airlift Squadron, 907th Tactical Air Group, Rickenbacker ANGB, OH. In 1992, the mission was transferred to 757th Airlift Squadron, 910th Airlift Wing, Youngstown-Warren ARS, OH, where it remains.

The aerial spray mission was performed by the UC-123K until 1986, when it converted to the C-130A. In 1988, the mission converted to the C-130E, and the MASS system was first installed; it converted to the C-130H in 1992. The combination of the MASS with the newer, more capable H-model aircraft further enhanced the capabilities of the aerial spray mission. The Unit added Geographical Information System (GIS) technology in 1996 and Differential Global Positioning System receivers to the spray aircraft in 1997. For more information on the C-130 aircraft, see pages 132–135.



MISSION

In the early 1970s, Congress established the Modular Airborne Fire Fighting System (MAFFS) Program to fight fires on military property. Several years later, the program was transferred to the United States Department of Agriculture's US Forest Service. When commercial air tankers are under contract but further assistance is needed, the Forest Service requests the aid of MAFFS organizations through the Department of Defense support program.



One Air Force Reserve and three Air National Guard (ANG) wings participate in the MAFFS Program. The 302nd Airlift Wing - Colorado Springs, CO, is the only Reserve unit; the Guard units include the 153rd AW - Cheyenne, WY, the 146th AW - Ft. Mugu Naval Air Station, CA, and the 145th AW - Charlotte, NC. The 302nd has two of the MAFFS units; the ANG has two systems in each of their three wings for a total of eight nationwide.

Crews who fly MAFFS missions participate in annual currency training with the National Interagency Fire Center. Each wing is required to have five certified crews for each MAFFS system. The 302nd AW maintains 10 qualified crews.

MAFFS aircraft can drop either water or retardant called "slurry." Slurry is made of 80 to 85 percent water, 10 to 15 percent ammonium sulfate (a jelling agent), and red coloring. The red in the retardant helps pilots see where they have dropped previous loads. Along with retarding the fire, the slurry acts as a fertilizer to promote subsequent new growth. The slurry is also non-toxic and biodegradable. Because the MAFFS discharges the agent in a mist, slurry does not cause damage to buildings. It is generally dropped in front of the fire, rather than on top of it, to prevent its spreading.

The MAFFS unit fits inside C-130 airplanes without requiring structural modification and can be loaded in two hours. C-130s drop retardant from an altitude of about 150 feet. If necessary, a MAFFS-equipped C-130 can discharge its load - 3,000 gallons, weighing 28,000 pounds - in less than five seconds. The retardant covers an area one-quarter of a mile long and 60 feet wide. After the plane discharges its load, it can be refilled in less than 12 minutes.

The 302nd AW took on the Reserve portion of the mission in 1993. Since that time, the 302nd has been called to fight fires in every year but one. The longest activation was the summer of 2004, when the wing was called to action on May 23 and released on Sept. 9. The 302nd has fought fires in most of the western states; 2002 was the first year they fought fires in their home state of Colorado.

In October 2007, Reservists from Peterson Air Force Base, CO, deployed to Pt. Mugu Naval Air Station, CA, to fight wildfires that destroyed thousands of homes and displaced over 300,000 California residents. The 302nd contributed two MAFFS-equipped C-130 aircraft and associated personnel and equipment; they joined four other modified C-130 aircraft for MAFFS from the ANG. Aircrews, maintenance specialists and ground support teams from Peterson logged 27 sorties for a total of 38.2 flying hours. The Peterson crews made 29 air drops during the 14-day operation. Their crews dropped 75,121 gallons (or 683,601 pounds) of retardant from their two C-130 aircraft.

MAFFS is a mission that exemplifies interagency cooperation. The 302nd belongs to the Department of Defense, yet works in concert with the Department of Interior, Department of Agriculture and state fire agencies. This cooperation has resulted in more than 30 years of effective, accident-free work, both on the ground and in the air.



Combat Search and Rescue

The Air Force has a rich history in Combat Search and Rescue (CSAR) operations dating back to World War II. Air Force combat rescue philosophy is based on maintaining a capability to recover combat aircrews and other isolated forces from hostile or denied areas. This philosophy further assumes rescue forces are placed at risk to recover personnel.

Successful CSAR enhances the joint force commander's (JFC) combat capability by returning personnel to areas under friendly control and denying adversaries the opportunity to exploit the intelligence and propaganda value of captured personnel. Robust and viable CSAR force increases morale and, ultimately, operational performance.

The 920th Rescue Wing located at Patrick AFB leads the way in providing this critical capability to the Air Force and its joint partners. Reservists retain a large portion of the corporate memory in the search and rescue field bringing to bear their experience and expertise in saving lives and preserving our most valuable assets - our people.

The 920th Rescue Wing is comprised of 23 subordinate groups and squadrons, including two geographically-separated units at Davis-Monthan Air Force Base, AZ., and Portland, OR. The 920th built its reputation on its ability to overcome adversity and quickly adapt to formidable environmental challenges. In addition to recording more than 1,800 saves during its 50-year history, the unit also maintains a perfect, accident-free flying record.



MISSION

Guardian Angel (GA) is an Air Force weapons system consisting of Combat Rescue Officers (CROs); Pararescuemen (PJ); and Survival, Evasion, Resistance, and Escape Specialists (SEREs) operating together to provide a dedicated mission capability to prepare, report, locate, support, recover, and reintegrate isolated personnel in support of Combat Search and Rescue (CSAR) and personnel recovery programs.

GA forces operate in 12-man Recovery Teams (RTs) with dedicated CSAR. They work in austere and non-permissive environments, performing humanitarian and disaster relief; they also support NASA and other national rescue missions (including civil search and rescue operations).



DESCRIPTION

Air Force Reserve GA personnel and equipment are assigned to the 920th Rescue Wing (RQW), Patrick AFB, FL. Subordinate 920th RQW, GA units are also located at Davis-Monthan AFB, AZ; and Portland IAP, OR. Contractors supporting GA are numerous and located throughout the United States.

GA capability requires updated equipment, including the means to reduce the possibility of becoming victims of fratricide during rescue missions, the ability to team with commercially-available rescue equipment being used by U.S. Government and foreign civilian organizations, and hardware that will permit realistic force-on-force training to better prepare for real-world contingency missions.

MISSION

The primary mission of the HH-60G Pave Hawk helicopter is to conduct day or night combat search and rescue, or CSAR, operations into hostile environments to recover downed aircrew or other isolated personnel during war. Because of its versatility, the HH-60G is also tasked to perform military operations other than war. These tasks include civil search and rescue, emergency aeromedical evacuation, disaster relief, international aid, counterdrug activities and NASA space shuttle support.



DESCRIPTION

The Pave Hawk is a highly modified version of the Army Black Hawk helicopter which features an upgraded communications and navigation suite that includes integrated inertial navigation/global positioning/Doppler navigation systems, satellite communications, secure voice, and Have Quick communications. All HH-60Gs have an automatic flight control system, night vision goggles with lighting and forward looking infrared system that greatly enhances night low-level operations. Additionally, Pave Hawks have color weather radar and an engine/rotor blade anti-ice system that gives the HH-60G an adverse weather capability.

Pave Hawk mission equipment includes a retractable in-flight refueling probe, internal auxiliary fuel tanks, two crew-served 7.62mm or .50 caliber machineguns, and an 8,000-pound (3,600 kilograms) capacity cargo hook. To improve air transportability and shipboard operations, all HH-60Gs have folding rotor blades. Pave Hawk combat enhancements include a radar warning receiver, infrared jammer and a flare/chaff countermeasure dispensing system.

HH-60G rescue equipment includes a hoist capable of lifting a 600-pound load (270 kilograms) from a hover height of 200 feet

(60.7 meters), and a personnel locating system that is compatible with the PRC-112 survival radio and provides range and bearing information to a survivor's location. A limited number of Pave Hawks are equipped with an over-the-horizon tactical data receiver that is capable of receiving near real-time mission update information.

Contractors

Prime: United Technologies/Sikorsky Aircraft Company

SPECIFICATIONS

Weight: 22,000 lbs.

Range: 500 nautical miles (NM)

Armament: M-240 7.62 machine gun, GAU-2C-7.62mm mini-gun, GAU-18 .50 caliber machine gun

Dimensions: Main Rotor: 53 ft.; Length: 64 ft.; Height: 16 ft.

Service Ceiling: 14,200 ft.

Self-Protection: Integrated Chaff/Flare/RWR, Infra-red (IR) Jammer, Kevlar armor, Self-sealing fuel tanks

Speed: 184 mph (159kts)

Other Specifications: Communications: UHF Line-of-Sight (LOS), VHF LOS, Secure UHF Satellite Communications (SATCOM)/DAMA, Personal Locator System (PLS), HQ-II; Navigations: Integrated INS/GPS/Doppler Forward Looking Infrared (FLIR), over-the-horizon (OTH) Tactical Receiver, Digital Moving Map/Threat Display, WX Radar, and Hoist

Program Status: Sustainment

AFR Units operating this weapon system: *As primary operators:* 920th Rescue Wing - Patrick AFB, FL (AFRC); 943rd Rescue Group - Davis-Monthan AFB, AZ

Current Inventory: Reserve: 13 PAA & 2 BAI

Future Upgrades: Upgraded Comm/Nav/Electronic Warfare Suite, External Gun mount, Flare/Chaff CMDS – Self Protection System; 701C Engine – Improved Durability Gearbox Upgrade, Structural Integrity Program, Dual Engine Contingency Power, Light Airborne Recovery System ARS-6 Ver-12, Forward Looking Infrared System, Improved Night Vision Imaging System compatible External/Internal lighting. The next generation combat search and rescue replacement aircraft, CSAR-X, solves critical deficiencies in both numbers and capability of HH-60G.

MISSION

The HC-130P/N is an extended-range, combat search and rescue version of the C-130 Hercules transport. Its mission is to extend the range of combat search and rescue helicopters by providing air refueling in hostile or contested airspace if required.

Secondary mission capabilities include performing tactical delivery via airdrop or airland of pararescue specialist teams, small bundles, zodiac watercraft, or four-wheel drive all-terrain vehicles; and providing direct assistance to a survivor in advance of the arrival of a recovery vehicle.

Other capabilities are extended visual and electronic searches over land or water, tactical approaches and unimproved airfield operations at day or night, using night vision goggles. A team of three pararescue specialists, trained in emergency trauma medicine, harsh environment survival and assisted evasion techniques, is part of the basic mission crew complement.



DESCRIPTION

Combat Air Forces HC-130 aircraft are undergoing extensive modifications. Ongoing modifications include night vision goggle-compatible interior and exterior lighting, a personnel locator system compatible with aircrew survival radios, forward-looking infrared systems and advanced integrated radios.

The HC-130 can fly in the day against a reduced threat; however, crews normally fly night, low-level, air refueling and airdrop operations using night vision goggles (NVG). It flies low-level NVG tactical flight profiles to avoid detection. To enhance the probability of mission success and survivability near populated areas, crews employ tactics that include incorporating no external lighting or communications, and avoiding radar and weapons detection.

CONTRACTORS

Prime: Lockheed Martin (SC)

SPECIFICATIONS

Maximum Takeoff Weight: 155,000 lbs.

Range: 3,500 nautical miles (NM)

Dimensions: Wingspan: 132 ft.;
Length: 99 ft.; Height: 38 ft.

Service Ceiling: 30,000 ft.

Self-Protection: Radar and missile warning receivers, chaff and flare dispensers, cockpit armor

Speed: 289 mph (464 km per hour) at sea level

Other Specifications: Communications: UHF/VHF/SATCOM/
Secure/Anti-jam

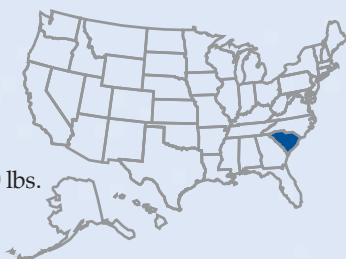
Navigation: Integrated INS/GPS/Doppler, digital low-power color radar

Program Status: Sustainment

AFR Units operating this weapon system: As primary operators:
920th Rescue Wing - Patrick AFB, FL

Current Inventory: Reserve: HC-130N (1 PAA); HC-130P (4 PAA)

Future Upgrades : Integrated SATCOM, NVG compatible lighting (ARC), Forward Looking Infrared (FLIR) (ANG), Enhanced Traffic Alert and Collision Avoidance System (E-TCAS) (partial), personnel locator system (partial), cockpit mods under C-130 Avionics Modernization Program (AMP), in-flight refueling (receiver) capability, tactical data receivers, HC-130 Simulator



Aeromedical Evacuation

Aeromedical Evacuation (AE) is the movement of regulated casualties, using USAF and/or contracted mobility airframes. AE aircrew train explicitly for this mission. It is the quickest method of moving patients from the theater of operations to definitive medical care. Rapidly evacuating critical care patients during contingencies prevents undue suffering, saves lives, enables a smaller medical presence within the theater of conflict and preserves military strength.

Rapid aeromedical evacuation of our war-wounded in the current conflicts in Iraq and Afghanistan to facilities such as the US Army Hospital in Landstuhl, Germany, has contributed to a 50 percent drop in mortality rates since the Vietnam War. AE is also used for humanitarian and disaster relief operations.

Air Force Reserve AE crews are the most experienced of USAF AE crews, many bringing civilian occupational expertise to the mission. Moreover, AFR AE crews comprise 60 percent of all USAF AE worldwide capability; they are made up of 2,060 unit Reservists and 124 full-time Airmen. They serve in the units and on the airframes listed on the following page.



AFRC Aeromedical Evacuation Squadrons (AES)

Unit	MDS	Location	Comment
34 th AES	C-130	Peterson AFB, CO	Activating 1 Apr 08
36 th AES	C-130	Pope AFB, NC	Activating 1 Apr 08
94 th AES	C-130	Dobbins ARB, GA	
315 th AES	C-17	Charleston AFB, SC	
349 th AES	C-17	Travis AFB, CA	
433 rd AES	C-130	Lackland AFB, TX	
439 th AES	C-130	Westover ARB, MA	
445 th AES	C-130	Wright-Patterson AFB, OH	
446 th AES	C-17	McChord AFB, WA	
452 nd AES	C-17	March ARB, CA	
459 th AES	KC-135	Andrews AFB, MD	
514 th AES	C-17	McGuire AFB, NJ	
622 nd AES	C-130	MacDill AFB, FL	Changing to KC-135 Jun 08
714 th AES	C-130	McGuire AFB, NJ	Inactivating 31 Mar 08
908 th AES	C-130	Maxwell AFB, AL	
911 th AES	C-130	Pittsburgh IAP ARS, PA	
914 th AES	C-130	Niagara IAP ARS, NY	
932 nd AES	C-130	Scott AFB, IL	
934 th AES	C-130	Minneapolis-St. Paul IAP ARS, MN	



Special Operations

Air Force Special Operations Command (AFSOC) provides Air Force special operations forces for worldwide deployment and assignment to regional unified commands. AFSOC's forces are highly trained, rapidly deployable Airmen. These forces conduct global special operations missions ranging from precision application of firepower, to infiltration, exfiltration, resupply and refueling of Special Operations Forces (SOF) operational elements.

AFSOC's unique capabilities include airborne radio and television broadcast for psychological operations. AFSOC also provides aviation instructors to foreign governments so that they may develop their internal defense capability. The command's special tactics squadrons combine combat controllers, special operations weathermen and other service SOF to form versatile joint special operations teams.

The Air Force Reserve plays a key role in many Air Force Special Operations mission areas providing trained and ready Airmen with exceptional depth and breadth gained through more experience than their regular force counterparts. What follows are some of the weapon systems operated by Airmen of the Air Force Reserve to perform these missions.



MISSION

Provide entry level formal training for Air Force Special Operations Command pilots.



DESCRIPTION

The Pilatus PC-12 is a medium-range, single-engine aircraft used to support diverse missions in support of Special Operations Command taskings. It features cockpit seating for two pilots plus cargo area for seating for up to nine passengers (PAX).

SPECIFICATIONS

Engine: Single Pratt & Whitney PT6A-67P engine, rated at 1200 SHP
4-bladed, constant speed, full-reversing propeller

Weight: Basic Operating Weight 6,757 lbs

Maximum Takeoff Weight: 10,450 lbs

Maximum Landing Weight: 9,920 lbs

Maximum Range: (3 PAX, 30,000 ft) 1573 nm/1809 sm

Maximum operating altitude: 30,000 ft

Maximum Payload: 1,029 lbs (with full fuel)

Speed: 280 knot (322 mph) maximum cruise performance

Passenger Capacity: Up to 9 passengers

AFR airmen operating this weapon system: *As associate operators:*
1st SOW – Hurlburt Field, FL

MISSION

The MC-130E Combat Talon I provides infiltration, exfiltration and resupply of special operations forces and equipment in hostile or denied territory. Secondary missions include psychological operations and helicopter air refueling.



DESCRIPTION

The MC-130E features terrain-following and terrain-avoidance radars capable of operations as low as 250 feet in adverse weather conditions. Structural changes to a basic C-130 include the addition of an in-flight refueling receptacle, and strengthening of the tail to allow high speed/low-signature airdrop. Its navigation suite includes dual ring-laser gyros, mission computers and integrated global positioning system. They can locate, and either land (or airdrop) on small, unmarked zones with pinpoint accuracy day or night.

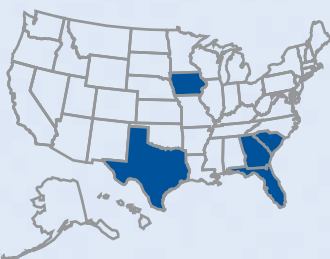
An extensive electronic warfare suite enables the aircrew to detect and avoid potential threats. If engaged, the system will protect the aircraft from both radar and infrared-guided threats.

The MC-130E is equipped with aerial refueling pods to provide in-flight refueling of special operations forces and combat search and rescue helicopters.

The Combat Talon I was conceived originally and developed during the 1960s, and although extensively upgraded in the 1980-90s it still features analog instrumentation and does not fully integrate the sensors and communications suites.

CONTRACTORS

Prime: Airframe - Lockheed Martin (SC); Integrated Weapon System Support - Boeing (FL); Radar - Raytheon (TX); General Avionics - L-3 Communications (GA, TX); Communications/Navigation - Rockwell Collins (IA)



SPECIFICATIONS

Maximum Takeoff Weight: 155,000 lb

Range: 2,700 nautical miles (NM); unlimited with in-flight refueling

Dimensions: Wingspan: 132 ft.; Length: 100 ft.; Height: 38 ft.

Program Status: Modifications only

AFR Units operating this weapon system: As primary operators: 919th SOW - Eglin AFB, FL

Current Inventory: Reserve: 12 PAA & 2 BAI



MISSION

The Combat Shadow flies clandestine or low visibility, single or multi-ship low-level air refueling missions for special operations helicopters, and infiltration, exfiltration, and resupply of special operations forces by airdrop or airland intruding politically sensitive or hostile territories. The MC-130P primarily flies missions at night to reduce probability of visual acquisition and intercept by airborne threats. Its secondary mission includes the airdrop of leaflets.



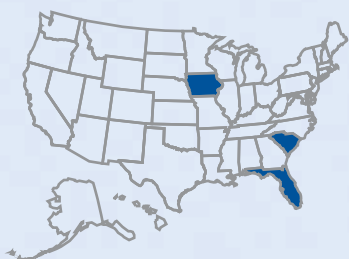
DESCRIPTION

Recent modifications to the MC-130P feature improved navigation, communications, threat detection and countermeasures systems. The Combat Shadow fleet has a fully-integrated inertial navigation and global positioning system, and night vision goggle compatible interior and exterior lighting. It also has forward looking infrared, radar and missile warning receivers, chaff and flare dispensers, night vision goggle compatible heads-up display, satellite and data-burst communications, as well as in-flight refueling capability as a receiver (on 14 aircraft).

The Combat Shadow can fly in the day against a low threat. The crews fly night low-level, air refueling and formation operations using night vision goggles. To enhance the probability of mission success and survivability near populated areas, employment tactics incorporate no external lighting and no communications to avoid radar and weapons detection.

CONTRACTORS

Prime: Airframe - Lockheed Martin (SC); Integrated Weapon System Support - Boeing (FL); Communications/Navigation - Rockwell Collins (IA)



SPECIFICATIONS

Maximum Takeoff Weight: 155,000 lb

Range: 4000 mi; unlimited with in-flight refueling

Dimensions: Wingspan: 132 ft.; Length: 99 ft.; Height: 38 ft.

Program Status: Modifications only

AFR Units operating this weapon system: As associate operators: 919th SOW - Eglin AFB, FL

Current Inventory: Reserve: 0

Future Upgrades: Multiple modifications



MISSION

Provide all-weather surveillance, command, control, and communications needed by commanders of U.S., NATO, and other allied air defense forces.



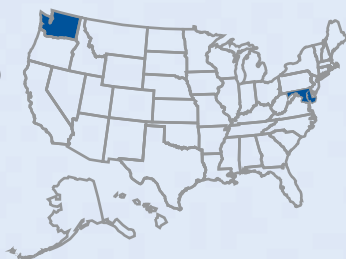
DESCRIPTION

The E-3 Sentry Airborne Warning and Control System (AWACS) aircraft provides responsive and flexible real-time command and control/battle management in support of worldwide operational employment of U.S. and coalition forces. AWACS provides persistent and survivable surveillance, battle management, weapons control, threat warning, and combat ID information in support of commander taskings. It gives commanders a self-contained and worldwide, around-the-clock capability to prosecute air and ground campaigns. The E-3 Sentry is a modified Boeing 707/320 commercial airframe with a rotating radar dome. The radar combined with an identification friend or foe subsystem can look down to detect, identify, and track enemy and friendly low-flying aircraft by eliminating ground clutter returns that confuse other radar systems. Other major subsystems in the E-3 include navigation, communications, computers (data processing), and displays.

CONTRACTORS

Prime: Boeing Aerospace Co. (WA)

Subcontractor(s): Northrop
Grumman (MD)



SPECIFICATIONS

Size: *Length:* 145 ft., 8 in. (44 m);

Wingspan: 130 ft., 10 in. (39.7 m);

Height: 41 ft., 4 in. (12.5 m)

Weight: 347,000 lbs. (156,150 kg)

Range: More than eight hours (unrefueled)

Coverage: The radar has a range of more than 250 miles (375.5 km) for low-flying targets and farther for aerospace vehicles flying at medium to high altitudes

Program Status: The AWACS Block 40/45 Upgrade is in the middle of System Development and Demonstration (SDD). It includes several projects aimed at reducing operator workload, providing a fused air picture to the warfighter, and transmitting that air picture off-board in a more timely manner Integrated Demand Assigned Multiple Access (DAMA) Global Air Traffic Management (GATM) (IDG) expands user availability of severely limited DoD UHF SATCOM channels through the use of DAMA and meets mandate for International Civil Aviation compliance on near-term air traffic control navigation requirements. The AWACS fleet is currently being modified with IDG

AFR Unit operating this weapon system: *As associate operators:*
513th ACG - Tinker AFB, OK

Current Inventory: 32 operational aircraft and 1 test aircraft



MISSION

Provide direct tactical Signals Intelligence (SIGINT) support to theater/component commanders.



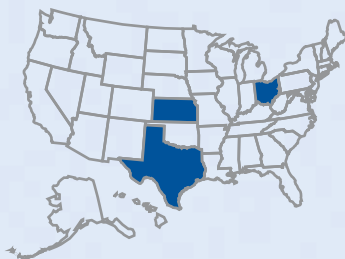
DESCRIPTION

RC-135V/W Rivet Joint is the DoD's premier manned airborne SIGINT platform. It is a self-contained collection, processing, analysis, and dissemination system. Rivet Joint rapidly fields tactical SIGINT capabilities to support the full spectrum of combat operations and national information needs. Rivet Joint flies over 700 airborne reconnaissance missions each year.

CONTRACTORS

Prime: Major Subsystems - L-3 Communications (TX);

Subcontractor(s): Propulsion - General Electric (OH); Airframe - Boeing (KS)



SPECIFICATIONS

Weight: 322,500 lbs. maximum take-off gross weight; 170,000 lbs. aircraft basic weight

Range: 5,000+ miles unrefueled; inflight refueling capable

Dimensions: *Length:* 140 ft.; *Wingspan:* 131 ft.; *Height:* 42 ft.

Speed: 500 mph

Duration: 8–10 hours unrefueled, limited only by aircrew duty requirements if aerial refueled

Program Status: Modification and Sustainment

AFR Airmen operating this equipment: As IMAs: 51 (33 airborne linguists and 20 intelligence specialists) augmenting 55th Wing - Offutt AFB, NE; As AGRs: 5

Current Inventory: 17 mission aircraft plus two flight deck trainer aircraft

Future Upgrade: Baseline 9 delivers FY09; Baseline 10 delivers FY11



MISSION

Provide dedicated support to ground troops by directly down-linking real-time full motion video to units equipped with Remotely Operated Video Enhanced Receiver (ROVER) terminals. Predator's primary mission is long-dwell reconnaissance and target acquisition in support of the Joint Forces commander.



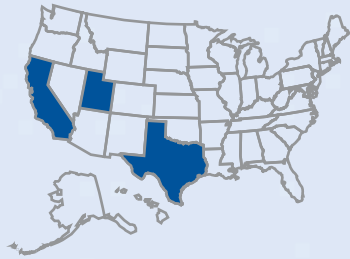
DESCRIPTION

The MQ-1 Predator is an Unmanned Aircraft System (UAS) that delivers persistent Intelligence, Surveillance, and Reconnaissance (ISR) with day/night full-motion video (EO/IR), laser target designation/illumination, and direct-strike capabilities using Hellfire laser-guided missiles. The MQ-1 Predator is a medium-altitude, long-endurance remotely piloted aircraft, and has the capability to directly attack critical, perishable targets.

CONTRACTORS

Prime: General Atomics -
Aeronautical Systems
Incorporated (CA)

Subcontractor(s): L-3
Communications (UT);
Raytheon (TX)



SPECIFICATIONS

Size: *Wingspan:* 55 ft.; *Length:* 28 ft

Weight: Maximum takeoff weight: 2,500 lbs.

Range: 400 nautical miles (NM) (with 16 hours on station)

Armament: Two AGM-114 Hellfire laser-guided missiles

Warhead: Blast/Fragmentation or anti-armor

Coverage: Varies by sensor. Full motion video coverage—electro-optical, infrared, and low-light video cameras; All are Line of Sight (LOS)

Capacity/Satellite: Sensor Data: Beyond Line of Sight (BLOS) SATCOM and Line of Sight (LOS) to ROVER customers. Future datalink improvements will provide more robust LOS Tactical Common Datalink (TCDL) to ROVER III and ground stations and a more robust BLOS datalink.

Interoperability: Sensor data currently provided via proprietary data links. Full Motion Video uses proprietary Motion JPEG format for BLOS and standard H.261 for ROVER. Future data link improvements will provide FMV via standard MPEG-2 format with NGA-standard Key Length Value (KLV) metadata over standard TCDL data links. Data sent to ROVER is used by forces on ground in direct contact with the enemy.

Compatibility: Sensor data is compatible with Predator ground stations and ROVER receivers

Program Status: Full rate production

AFR Units operating this weapon system: *As associate operators:*
78th Rec Squadron – Creech AFB, NV

Current Inventory: 88

MISSION

Provide persistent, near-real-time intelligence from high-altitude to support operations across the spectrum of conflict.



DESCRIPTION

The RQ-4A/B Global Hawk unmanned aerial weapon system consists of aircraft, sensors, ground stations, data links, and trained personnel. It combines high-altitude, long endurance, and beyond-line-of-sight (BLOS) communications to provide responsive, persistent intelligence support where needed, throughout the world.

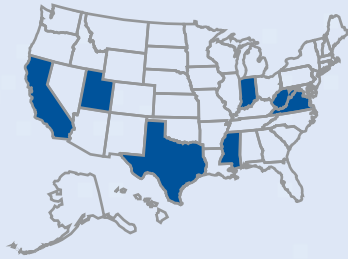
The RQ-4 provides critical information to U.S. and allied decision makers in all weather, day or night, throughout all phases of conflict, including peacetime indications and warnings, low-intensity conflict, and large-scale hostilities. The RQ-4 is being developed and fielded in capability blocks. Block 10 is currently operational and carries imagery intelligence (IMINT) sensors.

Crews fly the aircraft and control missions from ground stations made up of a Launch/Recovery Element (LRE) and a Mission Control Element (MCE). Takeoff and landing is controlled from an LRE at the RQ-4 airfield, using line-of-sight (LOS) or BLOS communications. During missions, aircraft and sensor control are accomplished from an MCE using BLOS links. MCEs may be located in CONUS (normal reachback operations) or at any appropriate location that affords the requisite communications connectivity.

As it is collected, RQ-4 sensor data is transmitted BLOS through the MCE to appropriate locations for analysis and dissemination, and may be simultaneously transmitted directly to locations within aircraft LOS. RQ-4 reachback capability enables reduced forward footprint and enhanced crew safety while retaining full mission effectiveness.

CONTRACTORS

Prime: Northrop Grumman (CA); Raytheon (CA); Raytheon (VA); L3 Communications (UT); Vought (TX); Rolls Royce (IN); Aurora (WV)



Subcontractor(s): *Ground Stations* - Raytheon (VA); *Propulsion* - Rolls-Royce (IN); *Tail Structure* - Aurora Flight Systems (WV); *Wing* - Vought Aircraft (TX); *Aircraft Sub-assembly* - Northrop-Grumman (MS); *Sensors* - Raytheon (CA); *Data links* - L-3 Communications (UT)

SPECIFICATIONS

Size: Block 10 - 26,750 lbs. takeoff gross weight, Blocks 20, 30 & 40 - 32,250 lbs takeoff gross weight

Range: Block 10 - 9,500 nm; Blocks 20, 30, & 40 - 8,700 nm

Dimensions: Block 10 - *Length:* 44 ft.; *Wingspan:* 116 ft.; *Height:* 14 ft.; Blocks 20, 30, and 40 - *Length:* 48 ft.; *Wingspan:* 131 ft.; *Height:* 15 ft.

Coverage: Wide area coverage due to high altitude and long endurance. Sensor capability varies by block.

Interoperability: RQ-4 uses commercial Ku BLOS or X-band LOS data links for combined C2 and sensor data, with INMARSAT and UHF data links as back-up. It is interoperable through the MCE with Distributed Common Ground Station (DCGS) nodes, including compatible Army, Navy and Marine Corps surface terminals.

Speed: Block 10 - 340 knots; Blocks 20, 30 and 40 - 310 knots

Payload: Block 10 - 2,000 lbs.; Block 20 - 3,000 lbs.; Block 30 - 3,000 lbs.; Block 40 - 3,000 lbs.

Other Specifications: Altitude - 60,000 ft; Endurance - 28 hours

Program Status: Low Rate Initial Production

AFR Unit operating this weapon system: *As associate operator:* 13th Reconnaissance Squadron - Beale AFB, CA

Current Inventory: 7 Block 10 aircraft and 2 ground stations

Future Upgrades: Block 20 - Larger aircraft with enhanced IMINT (EO/IR) sensors and greater payload capacity; Block 30 - Simultaneous IMINT and SIGINT (ASIP) sensors; Block 40 - Single sensor (MP-RTIP) for improved imagery and surface/air moving target indications

MISSION

Provide worldwide air refueling for Air Force, Navy, NATO, and allied aircraft, as well as strategic airlift capability; enable global mobility and local and global strike missions.



DESCRIPTION

The KC-10 Extender is an aerial refueling asset built on the commercial DC-10 airframe. The aircraft creates an air bridge to enable global mobility and global strike missions (such as B-2 missions) and local strike missions by enabling longer sorties. It has 88-percent systems commonality with the DC-10, with additional systems and equipment necessary for its Air Force mission. These additions include military avionics; aerial refueling boom and aerial refueling hose and drogue systems; a seated aerial refueling operator station; and aerial refueling receptacle and satellite communications.

The maximum fuel transfer rate to receiver aircraft is 1,100 gallons per minute for the boom system and 470 gallons per minute for the drogue system. There are 59 KC-10 aircraft in the USAF tanker fleet (20 aircraft with multi-point fueling capability).

CONTRACTORS

Prime: Airframe - Boeing (TX);
Engines - Kelly Aviation Center (KAC) (TX)

Subcontractor(s): ARINC (OK)



SPECIFICATIONS

Weight: Maximum gross takeoff weight: 590,000 lbs.

Dimensions: *Wingspan:* 165.3 ft.; *Height:* 58 ft.; *Length:* 181.5 ft.

Compatibility: Capable of air refueling Air Force, Navy, Marine, NATO, and allied Aircraft

Service Ceiling: 42,000 ft.

Speed: 619 mph (Mach 0.825)

Payload: Max total payload 356,000 lbs.

Max Cargo: 170,000 lbs.

Max Fuel Load: 186,000–356,000 lbs. (depending on cargo load)

Passenger Capacity: 75

AFR Units operating this weapon system: *As associate operators:*
349th AMW – Travis AFB, CA; 514th AMW - McGuire AFB, NJ



MISSION

Provide worldwide air refueling and strategic airlift for Air Force, Navy, NATO, and allied aircraft; enable global mobility and local and global strike.



DESCRIPTION

The KC-135 Stratotanker creates an air bridge to enable global mobility and global strike missions (such as B-2 missions) and local strike missions by enabling longer sorties. It is built on a similar airframe to the 707 passenger aircraft. The KC-135 completed an engine upgrade in June 2005 to put F-108 engines (CFM-56 commercial engines) on the 417 KC-135R model aircraft. It is equipped with military avionics, an aerial refueling boom, a prone aerial refueling operator station, and satellite communications.

There are currently 530 KC-135 E/D/R/T models in the inventory at 35 bases, 29 states, and two overseas bases: Kadena Air Base (AB), Japan, and RAF Mildenhall, UK. Several aircraft are capable of multi-point refueling using hose and drogue refueling.

CONTRACTORS

Prime: Engineering - Boeing (KS);

Depot Maintenance - Boeing (TX);

GATM - Rockwell Collins (TX)

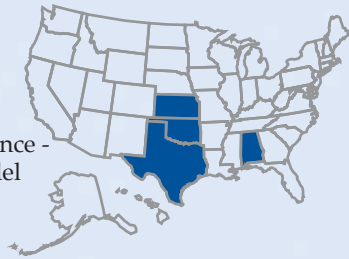
Subcontractor(s): Depot Maintenance -

PEMCO (AL); CFM-56/F108 R model

engines - General Electric (OK);

TF-33 E-model engines - Pratt &

Whitney (OK)



SPECIFICATIONS

Range: With fuel offload of 150,000 lbs. throughout flight: 1,500 nautical miles (NM)

Dimensions: *Wingspan:* 130.9 ft.; *Height:* 41.7 ft.; *Length:* 128.9 ft.

Compatibility: Capable of air refueling Air Force, Navy, Marine, NATO, and allied aircraft

Service Ceiling: 50,000 ft.

Speed: 530 mph at 30,000 ft.

Payload: Max total payload: 200,000 lbs.

Max Cargo Load: 83,000 lbs.

Max Fuel Load: 117,000–200,000 lbs.

Passenger Capacity: 54

AFR Units operating this weapon system: *As primary operator:* 434th ARW – Grissom AFB, IN; 452nd AMW – March AFB, CA; 459th ARW – Andrews AFB, MD; 507th ARW – Tinker AFB, OK; 916th ARW – Seymour Johnson AFB, NC; 927th ARW – Selfridge ANGB, MI (terminates Apr 08); 940th ARW – Beale, AFB, CA (terminates FY 08). *As associate operator:* 931st ARG – McConnell AFB, KS; 927th ARW – MacDill AFB, FL (beginning Apr 08).

Current Inventory: 64

Future Upgrades: Control Column Actuated Brake, Global Air Traffic Management (GATM)

MISSION

Provide strategic inter-theater airlift in support of U.S. national defense.

The gigantic C-5 Galaxy, with its tremendous payload capability, provides the Air Mobility Command airlift in support of United States national defense. The C-5 can carry fully equipped combat-ready military units to any point in the world on short notice and then provide field support required to help sustain the fighting force.



DESCRIPTION

The C-5 is one of the largest aircraft in the world and the largest airlifter in the Air Force inventory. The C-5 can carry more than any other airlifter. It has the ability to carry 36 standard pallets and up to 81 troops simultaneously. The Galaxy also carries all of the Army's air-transportable combat equipment, including such bulky items as its 74-ton mobile scissors bridge from the United States to any theater of combat on the globe. It can also carry outsize and oversize cargo intercontinental ranges and can take off or land in relatively short distances. Ground crews are able to load and off-load the C-5 simultaneously at the front and rear cargo openings, reducing cargo transfer times. Other features of the C-5 are:

- Able to operate on runways 6,000 feet long (1,829 meters)
- Six landing gear totaling 28 wheels to distribute the weight.
- Nose and aft doors that open the full width and height of the cargo compartment to permit faster and easier loading.
- A "kneeling" landing gear system that permits lowering of the parked aircraft so the cargo floor is at truck-bed height or to facilitate vehicle loading and unloading.
- Full width drive-on ramps at each end for loading double rows of vehicles.
- A system that records and analyzes information and detects malfunctions in more than 800 test points.

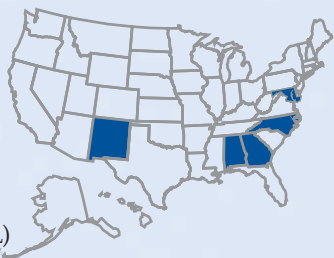
The C-5 has the distinctive high T-tail, 25-degree wing sweep, and four TF39 turbofan engines mounted on pylons beneath the wings. These engines are rated at 43,000 pounds of thrust each, and weigh 7,900 pounds (3,555 kilograms) each. They have an air intake diameter of more than 8.5 feet (2.6 meters). Each engine pod is nearly 27 feet long (8.2 meters).

The Galaxy has 12 internal wing tanks with a total capacity of 51,150 gallons (194,370 liters) of fuel — enough to fill 6 1/2 regular size railroad tank cars. A full fuel load weighs 332,500 pounds (150,820 kilograms). A C-5 with a cargo load of 270,000 pounds (122,472 kilograms) can fly 2,150 nautical miles, offload, and fly to a second base 500 nautical miles away from the original destination — all without aerial refueling. With aerial refueling, the aircraft's range is limited only by crew endurance.

CONTRACTORS

Prime: Lockheed Martin (GA)

Subcontractor(s): Avionics Modernization Program (AMP) - Honeywell (NM); ARINC (MD); Reliability Enhancement and Re-Engining Program (RERP) - General Electric (NC); Goodrich (AL)



SPECIFICATIONS

Maximum Takeoff Weight: 769,000 lbs. peacetime; 840,000 lbs. wartime

Range: 6320 nm without refueling; unlimited with in-flight refueling

Dimensions: *Wingspan:* 222.9 ft.; *Height:* 65.1 ft.; *Length:* 247.1 ft.

Service Ceiling: 45,000 ft.

Payload: Up to 36 pallets (270,000 lbs.)

Speed: 518 mph (450 knots)

Passenger Capacity: 81 with 36 pallets

Program Status: Sustainment/upgrade

AFR Units operating this weapon system: *As primary operators:* 439th AW – Westover ARB, MA; 445th AW – Wright-Patterson AFB, OH; 433rd AW – Lackland AFB, TX. *As associate operators:* 349th AMW – Travis AFB, CA; 512th AW – Dover AFB, DE

Current Inventory: Reserve: C-5A 27 PAA. C-5B 13 PAA

Future Upgrades: Reliability Enhancement Re-Engining Program (RERP) and Avionics Modernization Program (AMP)

MISSION

Provide operational support airlift for high priority passengers and cargo.

The C-9C is a twin-engine, T-tailed, medium-range, swept-wing jet aircraft, used to transport high-ranking government and Defense Department officials. The Air Force Reserve's 932nd Airlift Wing at Scott Air Force Base operates three C-9Cs for operational support of distinguished visitors.



DESCRIPTION

The C-9C is a modified version of the McDonnell Douglas Aircraft Corporation's DC-9. The 932nd Airlift Wing operates the C-9C for the airlift of medium-sized delegations of government and Department of Defense officials. Since 1973 the aircraft has been utilized for worldwide operations, and in the past has been used to carry the Vice President or the First Lady.

CONTRACTORS

Prime: Airframe Depot - Lockheed Martin (SC); Engine Depot - AeroThrust (FL)



SPECIFICATIONS

Maximum Takeoff Weight: 110,000 lbs.

Range: >2,000 nautical miles (NM)

Dimensions: Wingspan: 93 ft.; Length: 119 ft.; Height: 27 ft.

Service Ceiling: 37,000 ft.

Speed: 565 mph (Mach 0.84)

Passenger Capacity: 42 passengers

Program Status: Sustainment

AFR Units operating this weapon system: *As primary operators:*
932nd AW - Scott AFB, IL

Current Inventory: Reserve: 3 PAA

MISSION

Provide rapid strategic delivery of troops and all types of cargo to main operating bases or directly to forward bases in the deployment area.

The C-17 Globemaster III is the newest, most flexible cargo aircraft to enter the airlift force. The C-17 is capable of rapid strategic delivery of troops and all types of cargo to main operating bases or directly to forward bases in the deployment area. The aircraft can perform tactical airlift and airdrop missions and can also transport litters and ambulatory patients during aeromedical evacuations when required. The inherent flexibility and performance of the C-17 force improve the ability of the total airlift system to fulfill the worldwide air mobility requirements of the United States.



DESCRIPTION

Reliability and maintainability are two outstanding benefits of the C-17 system. Current operational requirements impose demanding reliability and maintainability. These requirements include an aircraft mission completion success probability rate of 92 percent, only 20 aircraft maintenance man-hours per flying hour, and full and partial mission availability rates of 74.7 and 82.5 percent, respectively. The Boeing warranty assures these figures will be met.

The C-17 measures 174 feet long (53 meters) with a wingspan of 169 feet, 10 inches (51.75 meters). The aircraft is powered by four, fully reversible, Federal Aviation Administration-certified F117-PW-100 engines (the military designation for the commercial Pratt & Whitney PW2040), currently used on the Boeing 757. Each engine is rated at 40,440 pounds of thrust. The thrust reversers direct the flow of air upward and forward to avoid ingestion of dust and debris. Maximum use has been made of off-the-shelf and commercial equipment, including Air Force-standardized avionics.

The aircraft is operated by a crew of three (pilot, copilot and loadmaster), reducing manpower requirements, risk exposure and long-term operating costs. Cargo is loaded onto the C-17 through a large aft door that accommodates military vehicles and palletized

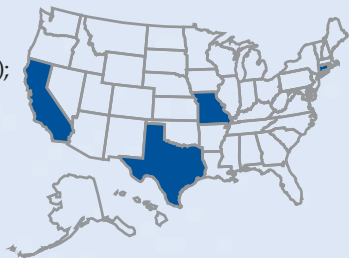
cargo. The C-17 can carry virtually all of the Army's air-transportable equipment.

Maximum payload capacity of the C-17 is 170,900 pounds (77,519 kilograms), and its maximum gross takeoff weight is 585,000 pounds (265,352 kilograms). With a payload of 169,000 pounds (76,657 kilograms) and an initial cruise altitude of 28,000 feet (8,534 meters), the C-17 has an unrefueled range of approximately 2,400 nautical miles. Its cruise speed is approximately 450 knots (.76 Mach). The C-17 is designed to airdrop 102 paratroopers and equipment.

The design of the aircraft allows it to operate through small, austere airfields. The C-17 can take off and land on runways as short as 3,500 feet (1,064 meters) and only 90 feet wide (27.4 meters). Even on such narrow runways, the C-17 can turn around using a three-point star turn and its backing capability.

CONTRACTORS

Prime: Airframe - Boeing (CA, MO);
Engines - Pratt & Whitney (CT),
Subcontractor(s): Major Airframe
Components - Vought Aircraft
Industries (TX)



SPECIFICATIONS

Maximum Takeoff Weight: 585,000 lbs.

Range: Unlimited with in-flight refueling

Dimensions: *Wingspan:* 169 ft. 10 in.; *Height:* 55 ft. 1 in.; *Length:* 174 ft.

Service Ceiling: 45,000 ft.

Speed: 450 knots at 28,000ft (Mach 0.76)

Payload: 170,900 lbs. (18 pallets)

Passenger Capacity: 102 troops/paratroops or 36 litters and 54 ambulatory attendants

Program Status: Production; 15 per year; projected inventory - 190

AFR Units operating this weapon system: *As primary operators:* 452nd AMW – March ARS, CA. *As associate operators:* 315th AW – Charleston AFB, SC; 349th AMW – Travis AFB, CA; 446th AW – McChord AFB, WA; 512th AW – Dover AFB, DE; 514th AMW – McGuire AFB, NJ

Current Inventory: Reserve: 8 PAA

Future Upgrades: Modifications

MISSION

Provide worldwide air transportation for U.S. leaders and Combatant Commanders (COCOM).

The C-40 B/C provides safe, comfortable and reliable transportation for U.S. leaders to locations around the world. The C-40B's primary customers are the combatant commanders and C-40C customers include members of the Cabinet and Congress. The aircraft also perform other operational support missions.



DESCRIPTION

The C-40 B/C is based upon the commercial Boeing 737-700 Business Jet. The body of the C-40 is identical to that of the Boeing 737-700, but has winglets. Both models have state of the art avionics equipment, integrated Global Positioning System and Flight Management System/Electronic Flight Instrument System and a heads up display. Heading the safety equipment list is the Traffic Collision Avoidance System and enhanced weather radar. The aircraft is a variant of the Boeing next generation 737-700, and combines the 737-700 fuselage with the wings and landing gear from the larger and heavier 737-800. The basic aircraft has auxiliary fuel tanks, missionized interior with self-sustainment features and managed passenger communications.

The cabin area is equipped with a crew rest area, distinguished visitor compartment with sleep accommodations, two galleys and business class seating with worktables.

The C-40B is designed to be an "office in the sky" for senior military and government leaders. Communications are paramount aboard the C-40B which provides broadband data/video transmit and receive capability as well as clear and secure voice and data communication. It gives combatant commanders the ability to

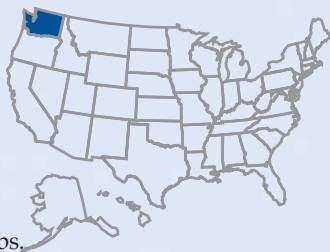
conduct business anywhere around the world using on-board Internet and local area network connections, improved telephones, satellites, television monitors, and facsimile and copy machines. The C-40B also has a computer-based passenger data system.

The C-40C is not equipped with the advanced communications capability of the C-40B. Unique to the C-40C is the capability to change its configuration to accommodate from 42 to 111 passengers.

CONTRACTORS

Prime: Airframe - Boeing (WA)

Subcontractor(s): Engines - CFM International (WA)



SPECIFICATIONS

Maximum Takeoff Weight: 171,000 lbs.

Range: 4,500 to 5,000 based on payload

Dimensions: *Wingspan:* 117 ft.; *Length:* 110 ft.; *Height:* 41 ft.

Service Ceiling: 41,000 ft.

Speed: 530 mph (Mach 0.8)

Passenger Capacity: C-40B: 26 to 32 passengers; C-40C: 42 to 111

Program Status: Procurement; three additional C-40Cs have been purchased for delivery to Scott AFB, IL during FY07/08; AF expects to complete delivery in FY08

AFR Unit operating this weapon system: *As primary operator:*
932nd AW - Scott AFB, IL

Current Inventory: Reserve: 4 PAA

Future Upgrades: Self Defense Systems for COCOM aircraft

MISSION

Provide airlift and transport for air-dropping troops and equipment into hostile areas.

The C-130 Hercules primarily performs the tactical portion of the airlift mission. The aircraft is capable of operating from rough, dirt strips and is the prime transport for air dropping troops and equipment into hostile areas.

The C-130 operates throughout the U.S. Air Force, serving with Air Mobility Command, Air Force Special Operations Command, Air Combat Command, U.S. Air Forces in Europe, Pacific Air Forces, Air National Guard and the Air Force Reserve Command, fulfilling a wide range of operational missions in both peace and war situations.

Basic and specialized versions of the aircraft airframe perform a diverse number of roles, including airlift support, Antarctic ice resupply, aeromedical missions, weather reconnaissance, aerial spray missions, firefighting duties for the U.S. Forest Service and natural disaster relief missions (pp. 92–97, 102, 108–111).



Photo by Joe Oliva

DESCRIPTION

Using its aft loading ramp and door the C-130 can accommodate a wide variety of oversized cargo, including everything from utility helicopters and six-wheeled armored vehicles to standard palletized cargo and military personnel. In an aerial delivery role, it can airdrop loads up to 42,000 pounds or use its high-flotation landing gear to land and deliver cargo on rough, dirt strips.

The flexible design of the Hercules enables it to be configured for many different missions, allowing for one aircraft to perform the role of many. Much of the special mission equipment added to the Hercules is removable, allowing the aircraft to revert back to its cargo delivery role if desired. Additionally, the C-130 can be rapidly reconfigured for the various types of cargo such as palletized equipment, floor-loaded material, airdrop platforms, container delivery system bundles, vehicles and personnel or aeromedical evacuation.

The C-130J is the latest addition to the C-130 fleet and will replace aging C-130Es. The C-130J incorporates state-of-the-art technology to reduce manpower requirements, lower operating and support costs, and provides life-cycle cost savings over earlier C-130 models. Compared to older C-130s, the J model climbs faster and higher, flies farther at a higher cruise speed, and takes off and lands in a shorter distance. The C-130J-30 is a stretch version, adding 15 feet to fuselage, increasing usable space in the cargo compartment.

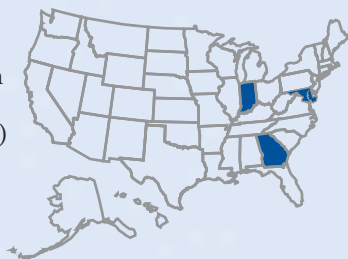
C-130J/J-30 major system improvements include: advanced two-pilot flight station with fully integrated digital avionics; color multifunctional liquid crystal displays and head-up displays; state-of-the-art navigation systems with dual inertial navigation system and global positioning system; fully integrated defensive systems; low-power color radar; digital moving map display; new turboprop engines with six-bladed, all-composite propellers; digital auto pilot; improved fuel, environmental and ice-protection systems; and an enhanced cargo-handling system.

CONTRACTORS

Prime: *C-130H* - Lockheed Martin Aeronautics Company (MD)

C-130J-30 - Lockheed Martin (GA)

Subcontractor(s): Engine - Rolls Royce (IN); Engine Subsystem - GKN Aerospace (UK); Propellers and Avionics - Smith Aerospace (U.S. and UK)



SPECIFICATIONS

Maximum Takeoff Weight: *C-130H*: 155,000 lbs. (69,750 kg)

C-130J-30: 164,000 lbs (74,545kg)

Range : *C-130H* with 35,000 Payload Range 1,496 mi. (1,300 nm);

C-130J-30 with 35,000 Payload Range 2,417 mi. (2,100 nm)

C-130H/J Hercules

Dimensions: *C-130H* Length: 97 ft., 9 in. (29.3 m); Height: 38 ft., 10 in. (11.9 m); Wingspan: 132 ft., 7 in. (39.7 m) *C-130J* Length: 112ft 9in; Height: 38 ft., 10 in. (11.9 m); Wingspan: 132 ft., 7 in. (39.7 m)

Service Ceiling: *C-130H:* 23,000 ft. (7,077 m); *C-130J-30:* 26,000 ft (8,000m)

Payload: *C-130H* - 42,000 lbs. (19,090 kg), *C-130J-30* - 44,500 lbs (20,227 kg)

Speed: *C-130H:* 366 mph/318 ktas (Mach 0.52) at 20,000 ft. (6,060 m) *C-130J-30:* 410 mph/356ktas (Mach 0.58) at 22,000ft (6,706 m)



Passenger Capacity: *C-130 H:* 92 combat troops, 64 paratroopers, or 74 litter patients, *C-130J-30:* 128 combat troops, 92 paratroopers, or 97 litter patients

Program Status: *C-130H* in sustainment

AFR Units operating this weapon system: *C-130H* primary operators: 94th AW – Dobbins ARB, GA; 302nd AW – Peterson AFB, CO; 440th AW – Pope AFB, NC; 908th AW – Maxwell AFB, AL; 910th AW – Youngstown-Warren ARS, OH; 911th AW – Pittsburgh IAP ARS, PA; 914th AW – Niagara IAP ARS, NY; 934th AW – Minneapolis-St Paul, MN. *C-130J-30* primary operator: 403rd AW -Keesler AFB, MS

Current Inventory: Reserve: *C-130H* (80 PAA), *C-130J-30* (8 PAA), *WC-130J* (10PAA)

Future Upgrades: Avionics Modernization Program (AMP), Large Aircraft Infrared Countermeasures (LAIRCM), Center Wing Box (CWB) Replacement, Enhanced Terrain Collision Avoidance System (ETCAS), APN-241 Weather Radar.

Status: C-130J Program full Rate Production through 2008; Projected inventory - 82; FY03 multi-year contract will deliver 42 C-130Js, FY05–FY09. FY06 GWOT Supplemental added 3 C-130Js.



MISSION

Provide Close Air Support (CAS) and Forward Air Control (FAC) supporting the land battle, including Special Forces, and provide Combat Search and Rescue (CSAR) and interdiction under certain circumstances.



DESCRIPTION

The A/OA-10 Thunderbolt II has excellent maneuverability at low air speeds and is a highly accurate weapons delivery platform. A/OA-10 pilots conduct night missions using Night Vision Imaging Systems (NVIS) which also allow for takeoff and landing using covert lighting.

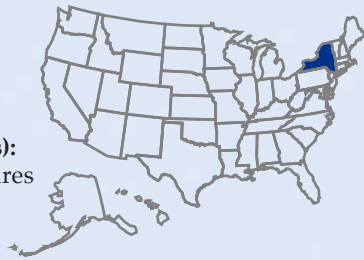
The Thunderbolt II is designed for survivability during close air support and can survive direct hits from armor-piercing and high-explosive projectiles up to 23mm.

Sophisticated avionics equipment includes communications, inertial navigation systems with embedded GPS capability, fire control and weapons delivery systems, target penetration aids, night vision goggles, and Litening Advanced Targeting Pods.

Internal weapons delivery systems include a 30mm GAU- 8/A Gatling gun that fires 3,900 rounds per minute. All A/OA- 10s are being upgraded to A-10C models by incorporation of the Precision Engagement (PE) modification, which extends through FY09. PE integrates the A-10 avionics systems with the targeting pod and a digital data link; and adds a digital stores management system, Hands On Throttle And Stick (HOTAS) aircraft systems interface, and a MIL-STD-1760 data bus allowing Joint Direct Attack Munition (JDAM) and Wind Corrected Munitions Dispenser (WCMD) weapons employment.

CONTRACTORS

Prime: System Integration, EMD,
Production and Sustainment -
Lockheed Martin Systems
Integration (NY) **Subcontractor(s):**
Integration and Analysis/Structures
- Northrop Grumman (NY)



SPECIFICATIONS

Weight: 51,000 lbs. (22,950 kg)

Range: 800 miles (695 nautical miles)

Armament: One 30 mm GAU-8/A seven-barrel Gatling gun with over 1,150 rounds of ammunition. Up to 16,000 lbs. (7,200 kg) of mixed ordnance on eight under-wing and three under fuselage pylon stations, including 500 lbs. (225 kg) Mk-82 and 2,000 lbs. (900 kg) Mk-84 series low/high drag bombs, GBU-31/32/38 Joint Direct Attack Munitions, incendiary cluster bombs, combined effects munitions, Wind Corrected Munitions Dispensers, mine dispensing munitions, AGM-65 Maverick missiles and laser-guided/electro-optically guided bombs; infrared countermeasure flares; electronic countermeasure chaff; jammer pods; 2.75-in. (6.99 cm) rockets; illumination flares; and AIM-9 Sidewinder missiles.

Dimensions: Length: 53 ft, 4 in. (16.16 m); Height: 14 ft, 8 in. (4.42 m); Wingspan: 57 ft, 6 in. (17.42 m)

Power Plant: Two General Electric TF34-GE-100 turbofans

Thrust: 9,065 lbs. each engine

Speed: 450 miles per hour (Mach 0.75)

Ceiling: 45,000 ft. (13,636 m)

Crew: 1

Program Status: Modification and sustainment; projected inventory—356

AFR Units operating this weapon system: *As primary operators:*
442nd FW - Whiteman AFB, MO; 917th WG - Barksdale AFB, LA

Current Inventory: 356 Total: 58 percent Active, 14 percent (51) assigned to AFRC, 28 percent Air National Guard (ANG)

Future Upgrades: Precision Engagement (PE), Extended Infrared Countermeasures (IRCM), Wing Replacement Program, and Mode S/5.

MISSION

Deliver massive quantities of precision and non-precision conventional weapons anywhere in the world at any time.



DESCRIPTION

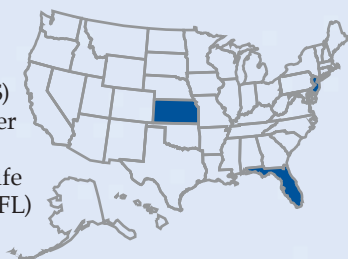
The B-52H Stratofortress is a long-range, heavy bomber that can perform a variety of missions. For more than 40 years, the B-52 Stratofortress has been the workhorse of the manned strategic bomber force for the United States.

The B-52 is capable of dropping or launching the widest array of weapons in the U.S. inventory. This includes gravity bombs, cluster bombs, precision guided missiles, and Joint Direct Attack Munition (JDAM).

Updated with modern technology, the B-52 is capable of delivering the full complement of joint developed weapons and continues into the 21st century as an important element of our nation's defenses. Air Force Reserve crews were first to be qualified in use of the Litening Advanced Targeting Pod with the B-52.

CONTRACTORS

Prime: Airframe - Boeing Aircraft (KS); Engines - Pratt & Whitney (KS)
Subcontractor(s): Electronic Counter Measures Improvement (ECMI) - ITT Industries (NJ); Avionics Midlife Improvement (AMI) - Honeywell (FL)



SPECIFICATIONS

Weight: Approximately 185,000 lbs. empty

Range: Intercontinental (unrefueled)

Armament: One weapons bay and two external pylons, capable of employing conventional and nuclear weapons from the bay and pylons (J-series from pylons only). Unguided weapons include 45 Mk-82 (500-lbs.) or 12 Mk-84 (2,000-lbs.) general-purpose bombs; Mk-62, Mk-63, and Mk 65 mines; 24 CBU-87/89 cluster munitions or 16 CBU-103/104/105 wind corrected equivalents. Precision weapons include 12 GBU-31 (2,000-lbs.) JDAMs or 12 AGM-154 Joint Standoff Weapons (JSOW) or 20 AGM-86 C/D Conventional Air Launched Cruise Missiles (ALCM) or 12 AGM-158 Joint Air-to-Surface Standoff Missiles (JASSM) or 10 GBU-10 (2000-lbs.) laser guided bombs (LGB) or 13 GBU-12 (500-lbs.) LGBs. Initial capability for 12 GBU-38 (500-lb) JDAM was in March 2005.

Dimensions: *Length:* 159 ft., 4 in.; *Height:* 40 ft., 8 in.; *Wingspan:* 185 ft.

Service Ceiling: 50,000 ft.

Speed: 650 mph (Mach 0.86)

Crew Capacity: Five (aircraft commander, pilot, radar navigator, navigator, and electronic warfare officer)

Program Status: Modernization, Modification and Sustainment

AFR Unit operating this weapon system: *As primary operator:* 917th WG - Barksdale AFB, LA

Current Inventory: 76 Total - 8 aircraft assigned to AFRC

Future Upgrades: Conventional Modifications; Combat Network Communications Technology (CoNECT)—Satellite and secure wideband high data rate communication data link; Advanced Targeting Pods—Litening ATP spiral upgrades; Avionics Midlife Improvement—inertial navigation, aircraft computer and data transfer unit upgrades; Miniature Air Launched Decoy (MALD)

MISSION

Provide all-weather, extremely maneuverable, air-to-air fighter capability designed to gain and maintain air supremacy over the battlefield and defend the homeland.



DESCRIPTION

The F-15A-D Eagle is designed to perform air-to-air missions with uncompromising performance. The Eagle's air superiority is achieved through a mixture of unprecedented maneuverability, acceleration, range, weapons, and avionics. It can outperform and outfight enemy defense, outperform and outfight any current enemy aircraft at all altitudes, day or night, and in all types of weather.

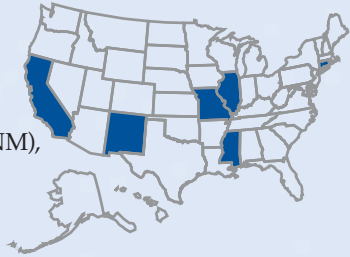
The Eagle has electronic systems and weaponry to detect, acquire, track and attack enemy aircraft while operating in friendly or enemy-controlled airspace. The weapons and flight control systems are designed so one person can safely and effectively perform air-to-air combat. The F-15A-D augments the F-22A as a proven air superiority aircraft employing all of the Air Force's air-to-air missiles.

The USAF plans to keep 178 F-15C/Ds in the inventory through 2025. Modernization efforts include AESA radars, helmet mounted cueing systems, and GPS. The Air Force Reserve has pilots assigned to active duty F-15A-D units flying under the Fighter Associate Program (FAP).

CONTRACTORS

Prime: Boeing Aircraft (MO)

Subcontractor(s): Engine - Pratt & Whitney (CT); Radar - Raytheon (MS, CA); Avionics - Honeywell (NM), Northrop Grumman (IL)



SPECIFICATIONS

Weight: 68,000 lbs. (C/D maximum takeoff weight)

Range: 3,450 mile ferry range with conformal fuel tanks and three external fuel tanks

Armament: One 20mm multi-barrel gun mounted internally with 940 rounds of ammunition; Normal missile load is two AIM-9Xs and six AIM-120s.

Dimensions: *Wingspan:* 42.8 ft.; *Length:* 63.8 ft.; *Height:* 18.5 ft.

Speed: Mach 2.5 plus

Service Ceiling: 50,000 ft.

Power Plant: Two Pratt & Whitney F100-PW-100 or 220 turbofan engines with afterburners

Thrust: 23,450-25,000 lbs. each engine

Crew: F-15A/C: one; F-15B/D: two

Program Status: Modernization and sustainment

AFR Airmen operating this weapon system: *As associate operators:* Eglin AFB, FL; Langley AFB, VA; Nellis AFB, NV.

Current Inventory: Active force, 359; Air National Guard, 140;

Future Upgrades: The F-15A-D will maintain the aircraft's operational effectiveness through 2025+, and will include active electronically scanned array radar, a digital electronic warfare suite, and a helmet mounted cueing system.

MISSION

Provide unique night/all-weather/all-altitude deep-penetration precision strike capability and air superiority. The F-15E also performs Close Air Support (CAS), Time Sensitive Targeting (TST), Dynamic Targeting, Destruction of Enemy Air Defenses (DEAD), Offensive and Defensive Counter Air, Homeland Defense, Global Persistent Attack, Non-Traditional Intelligence Surveillance and Reconnaissance, Strike, and Air Interdiction.



DESCRIPTION

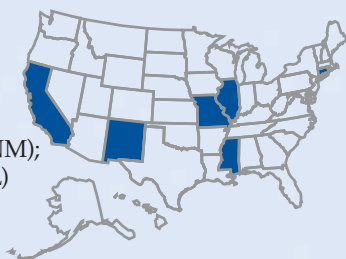
The F-15E Strike Eagle is a dual-role fighter designed to perform nearly all air-to-air and air-to-ground missions. It is a twin-engine, two-tail, two-seat, supersonic fighter capable of employing nearly all USAF air-to-ground and air-to-air munitions.

The F-15E has an array of modern avionics and electronics systems that enable the pilot and weapons system officer to fight at all altitudes, day or night, and in all types of weather. Combining the highest fuel and weapons capacity of any fighter with systems such as Fighter Data Link, Night Vision Goggles, Low Altitude Navigation and Targeting Infrared for Night (LANTIRN) and infrared targeting pods, the F-15E has the capability to fight its way deep into enemy territory, destroy enemy ground positions with precision weapons, and then fight its way out.

The F-15E will remain in the legacy fighter force through 2030 and beyond. The Air Force Reserve has pilots assigned to active duty F-15E units flying under the Fighter Associate Program (FAP).

CONTRACTORS

Prime: Boeing Aircraft (MO)
 Subcontractor(s): Engine - Pratt & Whitney (CT); Radar - Raytheon (MS, CA); Avionics - Honeywell (NM); Avionics - Northrop Grumman (IL)



SPECIFICATIONS

Weight: 81,000 lbs. (maximum takeoff weight)

Range: 2,400 mi. ferry range with conformal fuel tanks and three external fuel tanks

Armament: One 20mm multi-barrel gun mounted internally with 500 rounds of ammunition; four AIM-120 Advanced Medium Range Air-to-Air (AMRAAM) missiles and four AIM-9 Sidewinder missiles, or eight AIM-120 AMRAAM missiles; virtually all of the air-to-surface weapons in the Air Force inventory (nuclear and conventional), including GBU-28 Bunker Buster, GBU-15, AGM-130, AGM-65 Maverick, GPS guided Joint Direct Attack Munition (JDAM), Laser Guide Bombs (LGB), and Small Diameter Bombs (SDB)

Dimensions: *Wingspan:* 42.8 ft.; *Length:* 63.8 ft.; *Height:* 18.5 ft.

Speed: Mach 2.5 plus

Service Ceiling: 50,000 ft.

Power Plant: Two Pratt & Whitney F100-PW-220 or 229 turbofan engines with afterburners

Thrust: 25,000–29,000 lbs. each engine

Crew: Pilot and weapon systems officer

Program Status: Modernization and sustainment

Current Inventory: Reg AF - 224; Air National Guard - 0; Reserve - 0

AFR Airmen operating this weapon system: *As associate operators: Seymour-Johnson AFB, NC*

Future Upgrades: Upgrades to the F-15E will maintain the aircraft's operational effectiveness through 2030 and are planned to include an active electronically scanned array radar, a digital electronic warfare suite, and a helmet mounted cueing system.

MISSION

Provide low-cost, high-performance, air-to-air combat and air-to-surface attack capability.



DESCRIPTION

The F-16 Fighting Falcon is a compact, maneuverable, multi-role fighter aircraft that is proven in air-to-air combat and air-to-surface attack. The F-16's maneuverability and combat radius (distance it can fly to enter air combat, stay, fight and return) exceed that of potential threat fighter aircraft. It can locate targets in all weather conditions and detect low flying aircraft in radar ground clutter.

In an air-to-surface role, the F-16 can fly more than 500 miles (860 km), deliver its weapons with superior accuracy, defend itself against enemy aircraft, and return to its starting point. Fully fueled, the F-16 can withstand up to nine G's—nine times the force of gravity.

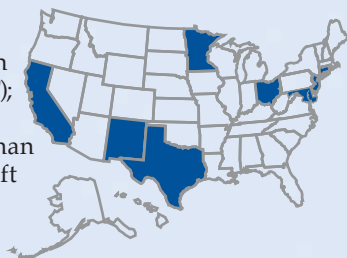
Avionics systems include a highly accurate inertial navigation system coupled with a GPS by which a computer provides steering information to the pilot. The plane has UHF and VHF radios, instrument landing system, a warning system, and modular countermeasure pods to be used against airborne or surface electronic threats.

Currently, the F-16 comprises 53 percent of the Air Force fighter force structure and provides 67 percent of the precision guided munitions capability in our Air Expeditionary Forces.

CONTRACTORS

Prime: Airframe - Lockheed Martin (TX); Engines - Pratt & Whitney (CT); General Electric (OH)

Subcontractors: Northrop Grumman (MD); Raytheon (TX); Israel Aircraft Industries (Israel); Honeywell International (CA, NJ, NM, MN)



SPECIFICATIONS

Weight: 37,500 lbs. (16,875 kg)

Range: More than 2,000 mi. ferry range (1,740 nautical miles)

Armament: One M-61A1 20mm multi-barrel cannon with 500 rounds; external stations can carry up to six air-to-air missiles, conventional air-to-air and air-to-surface munitions and electronic countermeasure pods.

Dimensions: *Length:* 49 ft., 5 in. (14.8 m); *Height:* 16 ft. (4.8 m); *Wingspan:* 32 ft., 8 in. (9.8 m)

Service Ceiling: Above 50,000 ft. (15 km)

Power Plant: F-16C/D: one Pratt & Whitney F100-PW-200/220/229 or General Electric F110-GE-100/129

Thrust: F-16C/D, 28,500 lbs.

Crew: F-16C, one; F-16D, one or two

Program Status: Sustainment, no new aircraft procurement planned at this time

AFR Units and airmen operating this weapon system: *As primary operators:* 301st FW – Fort Worth NAS JRB, TX; 482nd FW – Homestead ARB, FL; *As associate operators:* 301st FS – Luke AFB, AZ; 419th FW – Hill AFB, UT; Det 1, 307th FS – Shaw AFB, SC

Current Inventory: Regular Force, F-16C/D - 714; Reserve, F-16C/D - 52; and Air National Guard, F-16C/D - 472

Future Upgrades: Major structural integrity modifications to the airframe and engines to extend the service life, and avionics modifications for performance improvements and weapons compatibility

MISSION

Perform both air-to-air and air-to-ground missions enabling full realization of operational concepts vital to the 21st century Air Force.



DESCRIPTION

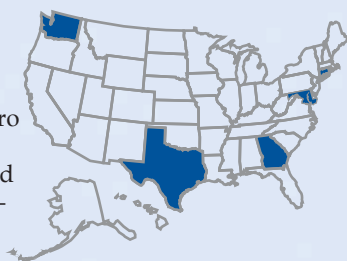
The F-22A Raptor is the Air Force's newest fighter aircraft. Its combination of stealth, supercruise, maneuverability, and integrated avionics, coupled with improved supportability, represents an exponential leap in warfighting capabilities.

The F-22A is a critical component of the Global Strike Task Force. It is designed to project air dominance rapidly at great distances and to defeat threats attempting to deny access to our nation's Joint Forces.

CONTRACTORS

Prime: Center Fuselage, Final Assembly, and overall System Integration - Lockheed Martin-Aero (GA); Mid Fuselage - Lockheed Martin-Aero (TX); Aft Fuselage and Wings - Boeing (WA); Propulsion - Pratt & Whitney (CT)

Subcontractor(s): Radar - Northrop Grumman (MD)



SPECIFICATIONS

Weight: 63,634 lbs.

Range: Primary Air Superiority Mission: 260 Nautical Miles (NM) subsonic + 100 NM supersonic radius; Secondary Subsonic Long Range Air Superiority Mission: 570 NM radius

Armament: One M61A2 20-millimeter cannon; Payload: 480 20mm rounds for the gun; side weapon bays can carry two AIM-9 infrared (heat seeking) air-to-air missiles; main weapon bays can carry (air-to-air loadout) six AIM-120 radar-guided air-to-air missiles or (air-to-ground loadout) two 1,000-lbs GBU-32 JDAMs and two AIM-120 radar-guided air-to-air missiles.

Dimensions: *Length:* 62 ft., 1 in. (18.9 m); *Height:* 16 ft., 8 in. (5.1 m); *Wingspan:* 44 ft., 6 in. (13.6 m)

Service Ceiling: Above 60,000 ft. (approximately 18 km)

Speed: Mach 2 class

Program Status: Full Rate Production; last delivery in 2011; projected inventory - 183

AFR Units operating this weapon system: *As associate operators:* 477th FG - Elmendorf AFB, AK; Holloman AFB, NM (TBD)

Current Inventory: 99 Aircraft (as of 30 Nov 2007); approximately 2 aircraft per month delivery rate

Future Upgrades: Integration of Small Diameter Bomb (SDB), Enhanced Air-to-Ground Radar, Non-traditional Intelligence, Surveillance, and Reconnaissance (NTISR) capabilities

MISSION

Provide all-weather, precision, stealthy, air-to-ground strike capability, including direct attack on the most lethal surface-to-air missiles (SAMs) and air defenses; meet the requirements of the three U.S. Services, the UK, and other allies.



DESCRIPTION

The F-35 Lightning II, Joint Strike Fighter (JSF) program will develop and deploy an affordable, fifth-generation, stealthy, multi-role strike fighter aircraft. The Conventional Takeoff and Landing (CTOL) F-35 will be used to support the Air Force core competencies of Air and Space Superiority, Global Attack, Precision Engagement, and Agile Combat Support.

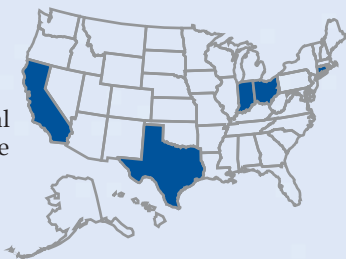
The F-35 will complement a force structure that includes fighter, bomber, and support assets operating in an environment with F-22A and within the projected Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) architecture. The F-35 capitalizes on system commonality and modularity among variants, maximizing affordability and logistical support for 21st century AEF employment. The service versions of the F-35 include the following:

- USAF: F-35A CTOL, stealthy, multi-role aircraft (primary air-to-ground) to replace the F-16 and A-10 and complement the F-22A
- USMC: F-35B (Short Takeoff and Vertical Landing (STOVL)), stealthy, multi-role strike fighter to replace the AV-8B and F/A-18
- USN: F-35C (Carrier Version (CV)), stealthy, multi-role strike fighter to complement the F/A-18E/F
- UK: F-35B STOVL aircraft to replace the Sea Harrier and GR-7

CONTRACTORS

Prime: Airframe - Lockheed Martin (TX); F135 Engine - Pratt & Whitney (CT); F136 Engine - General Electric/Rolls-Royce Fighter Engine Team (OH, IN)

Subcontractors: Center Fuselage - Northrop Grumman (CA); Aft Fuselage and Tails - BAE (UK); Lift System Components - Rolls-Royce (UK, IN)



SPECIFICATIONS

Weight: 28,900 lbs.

Combat Radius: *Threshold:* 590 NM (CTOL); 450 NM (STOVL); 600 NM (CV)

Armament: Payload - Internal: Two AIM-120C Advanced Medium Range Air-to-Air Missiles (AMRAAM); Two 2,000 lbs class Joint Direct Attack Munition (JDAM), Wind Corrected Munition Dispenser (WCMD), Guided Bomb Unit (GBU), Cluster Bomb Unit (CBU), Joint Stand-off Weapon (JSOW); Small Diameter Bomb; GAU-12 25mm gun; External: AIM-9X; Mk-82, 83, 84 family of JDAM and Laser Guided Bombs; AGM-158 Joint Air-to-Surface Standoff Missile (JASSM)

Dimensions: *Wingspan:* 35 ft.; *Length:* 51.1 ft.; *Wing Area:* 460 square ft. *"G":* +9.0/-3.0 (CTOL); +7.0/-2.0 (STOVL); +7.5/-3.0 (CV)

Speed: *Level Flight* - 1.5 Mach > 30,000 ft.; *Design Max* - 700 KCAS/1.6 Mach

AFR Units to operate this weapon system: AFR operation TBD. Planned testing at Edwards AFB, CA; Nellis AFB, NV; Planned training at Eglin AFB, FL

Program Status: System Development and Demonstration (SDD); Production began in 2007 with deliveries in 2009 - 2028; CTOL variants for USAF; STOVL/CV variants for the Navy and Marine Corps

Litening Advanced Targeting Pod (ATP)

MISSION

Provide Forward Looking Infrared (FLIR) imaging, Charge Coupled Device (CCD video) imaging, laser designator/spot tracker/range finder/IR marker, and video downlink (ROVER) on multiple platforms (A-10, F-16, and B-52).



DESCRIPTION

The currently fielded Litening ATP is a third generation pod with a 512K FLIR and 1K CCD, eye-safe and combat mode laser designator/spot tracker/range finder/IR marker with video downlink. Litening ATP provides a critical combat capability for positive target location and identification, and precision engagement. Combatant Commanders require Litening ATP capabilities for deployment and employment in combat.



CONTRACTORS

Prime: Northrup Grumman (IL)

Subcontractor(s): Raphael (Israel)



SPECIFICATIONS

Weight: 440lbs/200Kg

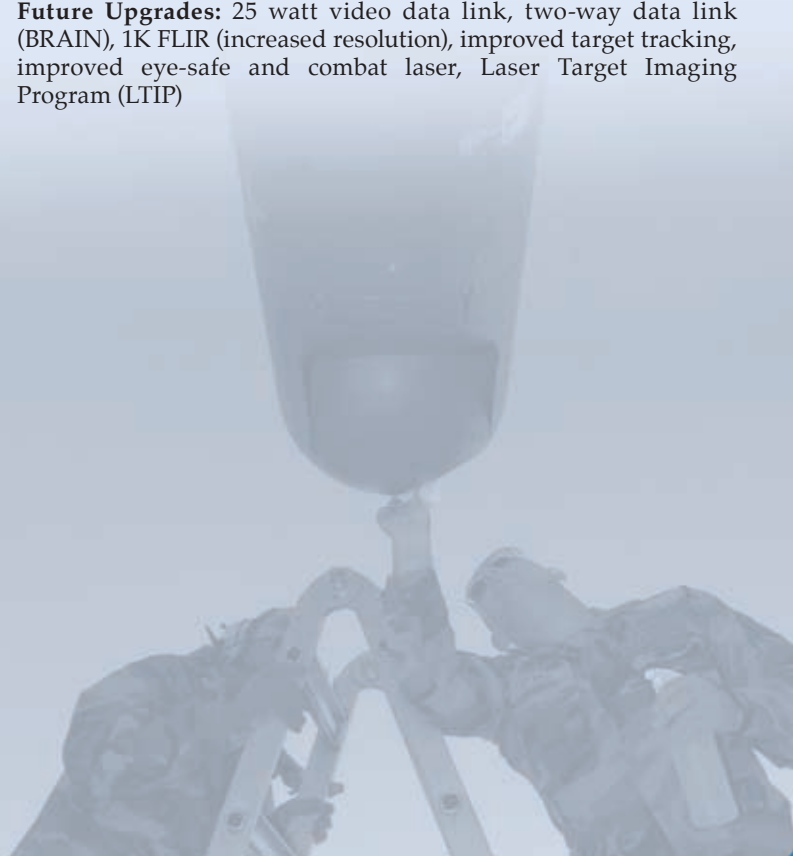
Dimensions: 87"/2.2m L x
16"/0.406m D

Compatibility: A-10, F-16, and B-52

Program Status: Completed acquisition of 65 Litening ATP for Air Force Reserve. On-going spiral upgrades with current focus on fourth generation ATP capabilities.

AFR Units operating this system: 917th WG - Barksdale AFB, LA; 301st FW - Fort Worth NAS JRB, TX; 416th FW - Homestead ARB, FL; 442nd FW - Whiteman AFB, MO

Future Upgrades: 25 watt video data link, two-way data link (BRAIN), 1K FLIR (increased resolution), improved target tracking, improved eye-safe and combat laser, Laser Target Imaging Program (LTIP)



MISSION

Provide helmet-mounted visual cueing of sensors and weapons; provide display of targeting and aircraft data; enable first-look/first-shot air-to-air visual range advantage, quicker ground target designation, and improved situational awareness.



DESCRIPTION

The Joint Helmet Mounted Cueing System (JHMCS) improves both air-to-air and air-to-ground combat effectiveness and situational awareness by providing a visor-projected Head-Up Display (HUD) to cue weapons and sensors, and display targeting and aircraft data. In close air-to-air combat, JHMCS allows the pilot to visually target enemy aircraft utilizing close range weapons, especially at high off-boresight angles with the AIM-9X.

For air-to-ground combat, JHMCS greatly reduces the time to designate and acquire ground targets. JHMCS improves situational awareness by displaying visual targeting and aircraft performance information on the helmet's visor, enabling the pilot to monitor this information while looking outside the cockpit.

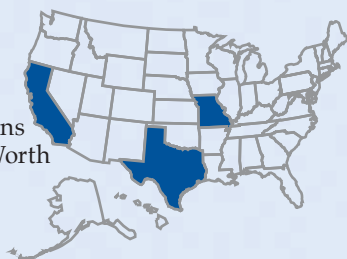
The system uses a magnetic transmitter unit on the left side canopy rail and a magnetic receiver unit in the helmet to determine the pilot's line-of-sight. The JHMCS Electronic Unit interfaces with the aircraft system bus to provide helmet line-of-sight to the mission computer and receive data for the helmet display.

The Air Force Reserve is pursuing a much lower cost helmet mounted cueing system to integrate the Litening Advanced Targeting Pod for aircraft not requiring the AIM-9X.

CONTRACTORS

Prime: Boeing (MO)

Subcontractor(s): Vision Systems International (CA); Rockwell Collins Display Systems (CA); Elbit Fort Worth (TX); Elbit Systems (Israel)



SPECIFICATIONS

Weight: Total head supported weight less than or equal to 4.3 lbs.

Compatibility: Operational on USAF F-15C/D, F-16C/D, Navy F/A-18C/D/E/F, and foreign F-15, F-16, F/A-18.

Field of View/Regard: 20° / 360°

Qualified Ejection Speed: 450 knots

Program Status: Joint Air Force/Navy Program in full rate production

AFR Units and Airmen operating this weapon system: *As associate operators:* 419th FW – Hill AFB, UT; 477th FG - Elmendorf AFB, AK; 307th FS - Shaw AFB, SC

Future Upgrades: Preplanned Product Improvement (P3I) includes Night Vision capability, and an option for a flat panel display.



MISSION

Provides F-16 aircraft with real-time capability to target enemy air defense system threats.



DESCRIPTION

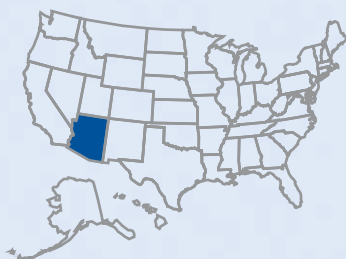
The F-16 High-Speed Anti-Radiation Missile (HARM) targeting system detects and provides targeting information on enemy air defense radar outside the lethal range of their associated surface-to-air missiles (SAM). The system supports the F-16's Suppression/Destruction of Enemy Air Defenses (SEAD/DEAD) mission.

The HARM Targeting System (HTS) enables employment of the AGM-88 HARM in the "range known" mode—the missile's most lethal mode. HTS targeting information increases HARM lethal range by 25 percent and increases the probability of hitting the target radar.

The HTS Release 7 (R7) version provides a multi-ship precision targeting capability needed for accurate employment of GPS-aided munitions as well as HARM, with increased situational awareness and detection range.

CONTRACTORS

Prime: Raytheon Missile Systems (AZ)



SPECIFICATIONS

Weight: R6 - 90 lbs.; R7 - 114 lbs. maximum

Dimensions: *Length:* 56 in.;
Diameter: 8 in.

AFR Airmen operating this weapon system: *As associate operators:*
307th FS - Shaw AFB, SC

Program Status: F-16 HTS is operational at four locations (seven active duty and one guard squadron). HTS R7 began fielding in September 2006; the last of 199 pods is scheduled for delivery in October 2008.



MISSION

Provide warfighting theaters with organic, survivable, and responsive penetrating tactical reconnaissance that gathers timely, high-quality imagery intelligence data for use by commanders in the air-land battle.



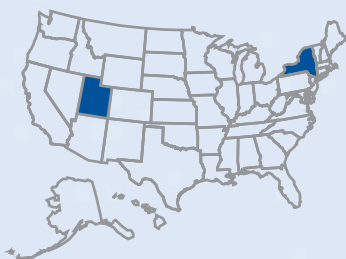
DESCRIPTION

The F16-TARS (Theater Airborne Reconnaissance System) consists of a removable pod uploaded to F-16C Block 25/30/32 aircraft. TARS is the Air Force's only high-speed, penetrating, under-the-weather, theater-controlled, reconnaissance capability. In the span of a single engagement, it provides unique rapid strike and reconnaissance in a high-threat environment.

Per the 2004 operational requirements document and as requested by CENTAF, TARS must provide near-real-time imagery transmission to forces on the ground, allowing immediate response to threats and battle damage assessment (BDA). Continuously deployed in Iraq since May 2005, TARS has significantly increased imagery available in Operation Iraqi Freedom (OIF) by producing images for CENTCOM in support of infantry and special operations personnel engaged in counter-insurgent pre-raid planning, time-sensitive targeting, BDA, and counter-IED support. Data link capability will begin limited fielding in FY07.

CONTRACTORS

Prime: BAE (NY); L-3
Communications (UT)



SPECIFICATIONS

Size: 162 in. x 29 in. x 28.5 in.

Weight: 1,200 lbs.

Coverage: Digital Electro-Optical Sensor

Capacity/Satellite: 20 Pods - 10 Forward Framing Sensor (FFS);
10 with Medium Altitude Electro-Optical and FFS

AFR Airmen operating this weapon system: As required by
Combatant Commanders in theater

Program Status: Sustainment

Future Upgrades: Datalink for near-real-time data transmission

MISSION

Destroy armored land combat vehicles, bunkers, structures, and ships with minimum collateral damage.



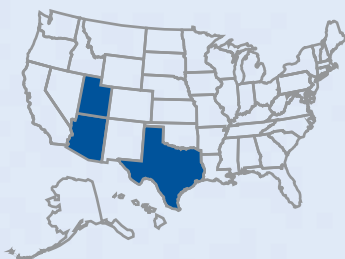
DESCRIPTION

The AGM-65 Maverick is a rocket-propelled, launch-and-leave, air-to-surface missile. Guidance is Electro-Optical (EO), Charge Couple Device (CCD), Infrared (IR), or LASER Seeker. The Maverick is a highly versatile, point-and-shoot weapon with targets including armor, vehicles, bunkers, air defense sites, and structures.

There are currently eight versions of the Maverick. The Air Force is currently modifying existing Mavericks (B, A/G) into AGM-65H/K CCD versions and has obtained AGM-65E LASER versions from the U.S. Marines with intentions to restart production due to the excellent moving target capability of the AGM-65E.

CONTRACTORS

Prime: Raytheon (AZ)
Subcontractor(s): Blarvin Engineering (TX); Moog Inc. (UT); Alliant Tech Systems (UT)



SPECIFICATIONS

Weight: 500 lbs.

Range: 10 nautical miles (NM) (H/K version)

Dimensions: *Length:* 97 in.; *Diameter:* 12 in.

Warhead: 300 lbs. Blast/Fragmentation—AGM-65G/G2/E/K; 125 lbs. Shaped—AGM-65A/B/D/H

Compatibility: Aircraft: A-10, F-16, F-15E

Program Status: AGM-65H/K modification production; Lot 6 being produced, Lot 7 to be determined.

Current Inventory: 5,596 AGM-65A/Bs; 3,030 AGM-65Ds; 4,976 AGM-65G/G2s; 1,537 AGM-65H/Ks

Future Upgrades: 1,500–2,000 AGM-65Gs (IR seeker) and AGM-65Bs (EO seeker) will be converted to AGM-65-H/Ks (CCD seeker) respectively. The goal is a 70/30 mix of IR (D/G/G2) and CCD (H/K).



AGM-86C/D Conventional Air Launched Cruise Missile (CALCM)

MISSION

Provide an adverse weather, day/night, air-to-surface, accurate, stand-off, and outside-of-theater-defenses strike capability.



DESCRIPTION

The AGM-86C/D Conventional Air Launched Cruise Missile (CALCM) provides an adverse weather, day/night, air-to-surface, accurate, stand-off, and outside of theater defenses strike capability. It is equally effective for stand-alone, clandestine/punitive strikes and fully-integrated theater warfare. AGM-86C uses onboard GPS coupled with its Inertial Navigation System (INS) to fly. This allows the missile to guide itself to the target with pinpoint accuracy.

The AGM-86C CALCM differs from the AGM-86B air-launched cruise missile in that it carries a conventional blast/fragmentation payload rather than a nuclear payload and employs a GPS aided INS.

The AGM-86D incorporates avionics upgrades as well as a new penetrating warhead. The AGM-86D penetrator is capable against a wide range of hardened, deeply buried targets.

CONTRACTORS

Prime: Boeing (MO)



SPECIFICATIONS

Weight: 3,250 lbs. C-model/3,280 lbs. for D-model

Range: >500 nautical miles (NM)

Dimensions: Length: 249 in.; Diameter: 24.5 in.

Warhead: 3,000 lbs. class, blast fragmentation warhead for C-model; 1,000 lbs. class, Advanced Unitary Penetrator (AUP-3M) for D-model

Compatibility: B-52H

Program Status: Sustainment (no longer in production)



MISSION

Target, suppress and destroy enemy radar and surface-to-air missile sites at standoff range utilizing high speed.



DESCRIPTION

The AGM-88 High Speed Anti-Radiation Missile (HARM) supports the Air Force's and Navy's Suppression of Enemy Air Defenses (SEAD) mission. Currently, HARM is the Air Force's and Navy's primary reactive anti-radiation weapon capable of destroying or suppressing enemy radars.

The missile uses anti-radiation homing to attack Surface-to-Air Missile (SAM) sites. HARM has a radar-sensing seeker, control section, warhead, and rocket motor. It is highly accurate and is an all-weather weapon.

The Air Force platform for the missile is the F-16C/CJ; the Navy platforms are the F/A-18 and EA-6B with growth planned for the F-18G (Growler) which will replace the EA-6B.

The Block IIIA/V missile upgrade adds limited geo-specificity and provides a significant step in countering rapidly improving threats and limiting collateral damage.

Future development includes the addition of a very accurate INS/GPS to increase accuracy and an improved point-to-point capability to allow destruction of non-radiating targets at extended ranges with minimized time-to-target. Other upgrades will include seeker improvements to expand the target set.

CONTRACTORS

Prime: Raytheon (AZ)



SPECIFICATIONS

Range: <80 nautical miles (NM)

Dimensions: *Length:* 164 in.;

Diameter: 10 in.; *Wingspan:* 36 in.

Warhead: 145 lbs. fragmentation warhead (New 45.2 lbs.);

Block III/IIIA - 25,000 steel fragments (12.6 grain);

Block IV/V - 14,000 tungsten cubes (30 grain)

Program Status: In sustainment

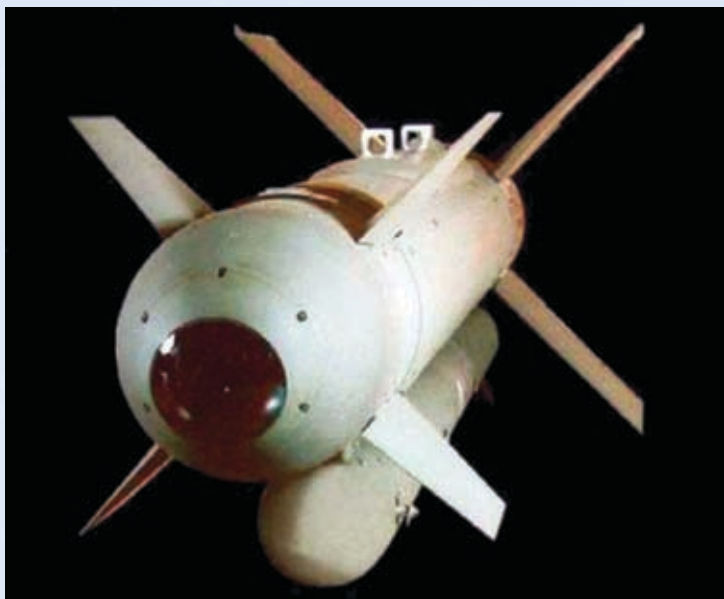
AFR Airmen operating this weapon system: *As associate operator:*
307th FS - Shaw AFB, SC

Current Inventory: 7,272

Future Upgrades: Under a Cooperative Research and Development (CRAD) agreement, Raytheon is upgrading the F-16 Aircraft. Launcher Interface Computer and developing a HARM control section modification to incorporate GPS quality accuracy, increasing probability of kill and allowing precise geo-specificity. The Air Force is considering modifying some AGM-88Cs in the FY08 timeframe.

MISSION

Attack fixed high-value targets, day or night, from outside point defenses.



DESCRIPTION

The AGM-130 Standoff Attack Weapon is a solid rocket-powered Guided Bomb Unit (GBU)-15. The AGM-130's Inertial Navigation System/Global Positioning System (INS/GPS) Midcourse Guidance (MCG) upgrade provides the operator with the existing basic weapon capabilities along with a significantly reduced aircrew workload, an increased capability for target acquisition, and various options for cruise altitudes and impact angles. A backup direct attack mode in the event of data link subsystem non-availability allows for missile release from low or high altitudes with target lock-on prior to release.

CONTRACTORS

Prime: Boeing (CA)



SPECIFICATIONS

Weight: 3,000 lbs.

Range: >30 nautical miles (NM)

Dimensions: *Length:* 158 in.;
Diameter: 18 in.

Warhead: Warhead: Blast/Fragmentation - Mk-84 vertical and horizontal targets; Penetrator: BLU-109; Fuze: FMU-124A/B (Mk-84), FMU-143 (BLU-109)

Interoperability: Platform: F-15E

Guidance: TV or IR Seeker; INS/GPS navigation/aim point update/terminal automatic tracking or manual steering via data link; <3 meter accuracy.

Propulsion: Solid Rocket Motor

AFR Airmen operating this system: Seymour-Johnson AFB, NC

Program Status: Sustainment

Current Inventory: 402

Future Upgrades: None

MISSION

Provide all-weather, all-altitude, medium-range capability to attack high-performance aircraft and missiles from any direction.



DESCRIPTION

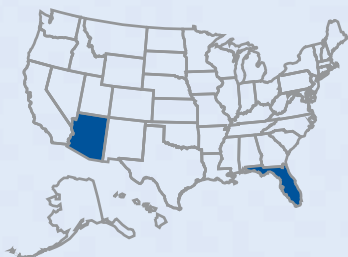
The Air Intercept Missile AIM-7M, Sparrow, is a radar-guided air-to-air missile with a high-explosive warhead. The versatile Sparrow provides all-altitude, all-weather, and all-aspect capability and is radar-guided throughout time-of-flight (TOF). Carriage is on the F-15, F-16ADF, and F-18. The AIM-7M H-build incorporates guidance improvements such as Home-On-Jam capability.



CONTRACTORS

Prime: Raytheon (AZ)

Subcontractor(s): General Dynamics (FL)



SPECIFICATIONS

Weight: 500 lbs.

Range: More than 30 nautical miles (NM)

Dimensions: *Length:* 12 ft.; *Diameter:* 8 in.

Warhead: Blast/Fragmentation: WAU-17; Continuous Rod: WAU-10

Interoperability: Aircraft dependent

Compatibility: Aircraft dependent

Service Ceiling: Aircraft dependent

Speed: More than 2,660 mph

Program Status: Navy program in sustainment

AFR Units operating this weapon system: AF-wide (system approved for demilitarization)

Current Inventory: 2,500

MISSION

Provide all-weather, all-altitude, short-range, air-to-air capability to attack high-performance aircraft and missiles from any direction.



DESCRIPTION

The Air Intercept Missile AIM-9M Sidewinder is a supersonic, short-range, passive infrared-guided, air-to-air missile with a high explosive warhead. The Sparrow has all-altitude, all-weather, and all-aspect capabilities. Carriage is on the A-10, F-15, F-16, F-16 ADF, and F-18.

The missile's main components are an infrared homing guidance section, an active optical target detector, a high-explosive warhead, and a rocket motor.

The AIM-9M features improved defense against infrared countermeasures, enhanced background discrimination capability, and a reduced-smoke rocket motor. These modifications increase its ability to locate and lock-on a target and decrease the missile's chances for detection.

CONTRACTORS

Prime: Raytheon (AZ)

Subcontractor(s): General Dynamics (FL)



SPECIFICATIONS

Weight: 191 lbs.

Range: More than 8 nautical miles (NM)

Dimensions: *Length:* 113 in.; *Diameter:* 5 in.

Warhead: Annular Blast/Fragmentation

Interoperability: Aircraft dependent

Compatibility: Aircraft dependent

Service Ceiling: Aircraft dependent

Speed: Supersonic

Program Status: Navy program in sustainment

AFR Units operating this weapon system: Numerous Active, Reserve, and National Guard squadrons



MISSION

Provide a launch-and-leave air combat munition that uses passive infrared (IR) energy for acquisition and tracking of enemy aircraft.



DESCRIPTION

The Air Intercept Missile AIM-9X Sidewinder is the newest variant of the Sidewinder missile. It is a supersonic, heat-seeking, short-range, air-to-air missile carried by fighter aircraft. It is used in both offensive and defensive counter-air operations. Offensively, the weapon ensures that U.S. and combined air forces can project the necessary power to ensure dominant maneuver.

In the defensive counter-air role, the missile system provides force protection. The AIM-9X complements longer-range radar-guided missiles such as the Advanced Medium Range Air-to-Air Missile (AMRAAM).

The AIM-9X development program provides a number of improved capabilities, including: Improved IR Countermeasure Performance; Improved Probability of Kill (Pk); Highly Maneuverable Airframe; High Off-Boresight (HOBS) Acquisition and Track; Day/Night Capability.

The AIM-9X is also compatible with the Joint Helmet-Mounted Cueing System (JHMCS), which is designed for ease of target acquisition and decreased aircrew workload.

Current platforms for the AIM-9X include the F-15C, F/A-18C/D, F/A-18E/F, and F-16. Follow-on platforms will include the F-22, F-35, and FMS aircraft.

CONTRACTORS

Prime: Raytheon (AZ)



SPECIFICATIONS

Weight: 187 lbs.

Dimensions: *Length:* 119 in.;
Diameter: 5 in.

Warhead: Annular Blast/Fragmentation

Interoperability: Aircraft dependent

Compatibility: Aircraft dependent

Service Ceiling: Aircraft dependent

Speed: Supersonic

Program Status: Joint Air Force/Navy Program in production;
projected inventory - 5097

AFR Units operating this weapon system: *As associate operators:*
477th FG - Elmendorf AFB, AK; 301st FS - Luke AFB AZ

Current Inventory: 690

Future Upgrades: Preplanned Product Improvement (P3I) efforts
and processor and fuze obsolescence updates.

AIM-120 Advanced Medium Range Air-To-Air Missile (AMRAAM)

MISSION

Provide all-weather, all-altitude, medium-range, air-to-air capability to attack high-performance aircraft and missiles from any direction.



DESCRIPTION

The Air Intercept Missile (AIM)-120 Advanced Medium-Range Air-to-Air Missile (AMRAAM) is a supersonic, medium-range, active radar guided air-to-air missile with a high-explosive warhead. The AIM-120 provides all-altitude, all-weather, all-aspect capability. AIM-120 platform options include the F-15, F-16, F/A-18, and F-22A.

The Preplanned Product Improvements (P3I) program will provide the AIM-120 with enhanced electronic protection (EP) capabilities; improved warhead, fuzing, and guidance; and increased kinematics via a new five-inch stretched rocket motor.



CONTRACTORS

Prime: Raytheon (AZ)

Subcontractors: Raytheon
Andover (MA); ATK Aerospace (UT)



SPECIFICATIONS

Weight: 356 lbs.

Range: 20+ nautical miles (NM)

Dimensions: *Length:* 144 in.; *Diameter:* 7.15 in.

Warhead: 45 lbs. Blast/Fragmentation

Interoperability: Aircraft dependent

Compatibility: Aircraft dependent

Service Ceiling: Aircraft dependent

Speed: Supersonic

Program Status: Joint Air Force/Navy Program in development/sustainment

AFR Units operating this weapon system: Numerous Active, Reserve, and Guard units

Current Inventory: 4,900 AF and 1,250 Navy

Future Upgrades: Preplanned Product Improvement (P3I) efforts

MISSION

Provide penetration, fragmentation, and incendiary effects for dispersed light armor and personnel targets.



DESCRIPTION

The Cluster Bomb Unit (CBU)-87 Combined Effects Munition (CEM) is a multi-purpose cluster weapon (penetration, fragmentation, incendiary effects) for dispersed light armor and personnel targets. After release from the aircraft, and at pre-determined flight parameters, the CBU-87 dispenses 202 BLU-97 bomblets (3-lbs. multi-purpose submunitions) over the target area in a circular pattern (pattern characteristics are determined by dispense conditions and winds).

The CBU-87 improves combat efficiency. Using the CBU-87 (and area attack weapons in general) decreases the time required to destroy necessary targets in a campaign, decreases the number of sorties required, keeps aircrews out of harm's way, and decreases the number of weapons required to accomplish the mission.

The CBU-103 combines the CBU-87 and the Wind Corrected Munitions Dispenser (WCMD) tail kit which inertially steers the munition from a known release point to precise target coordinates while compensating for launch transients, winds aloft, surface winds, and adverse weather.

CONTRACTORS

Prime: Aero General/Honeywell (MN); Alliant Tech (MN)



SPECIFICATIONS

Weight: ~950 lbs.

Range: Two CEM configurations:

CBU-87 (static tail): ballistic trajectory;

CBU-103 (Wind Corrected Munition Dispenser (WCMD) tail): 10 nautical miles (NM)

Armament: Contains 202 BLU-97 (3-lbs.) combined effects bomblets (shaped charge/fragmentation/incendiary)

Dimensions: Length: 92 in.; Diameter: 15.6 in.

Coverage: Coverage area (submunition pattern size) depends on many factors, but the pattern is typically circular with a diameter of about 200 ft.

Compatibility: The following aircraft can employ the CEM:

CBU-87; F-16, F-15E, F-117A, A-10, B-52, B-1B, B-2;

CBU-103; F-16, F-15E, B-52, B-1B

Program Status: No longer in production

Current Inventory: *CBU-87* approximately 87,000; *CBU-103* approx 19,800

Future Upgrades: None

MISSION

Provide a cluster bomb weapon containing anti-personnel and anti-armor bomblets for area denial missions.



DESCRIPTION

The Cluster Bomb Unit (CBU)-89 GATOR is a cluster weapon that contains anti-personnel and anti-armor bomblets. It is designed for area denial missions.

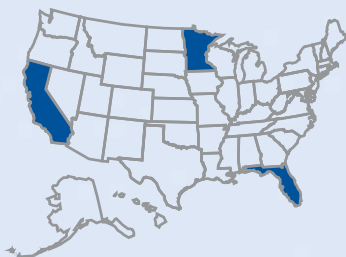
The CBU-89 GATOR dispenses 72 BLU-91 anti-tank bomblets and 22 BLU-92 anti-personnel bomblets over the target area in a circular pattern (pattern characteristics are determined by dispense conditions and winds).

The CBU-89 improves combat efficiency. Using CBU-89 (and area attack weapons in general) decreases the time required to destroy necessary targets in a campaign, reduces the number of sorties required, keeps aircrews out of harm's way, and decreases the number of weapons required to accomplish the mission. The CBU-89 contains a self destruct mechanism which can be set for three different time delays.

The CBU-104 combines the CBU-89 and the Wind Corrected Munitions Dispenser (WCMD) tail kit which inertially steers the munition from a known release point to precise target coordinates while compensating for launch transients, winds aloft, surface winds, and adverse weather.

CONTRACTORS

Prime: Honeywell (MN); Aerojet (CA); General Dynamics (FL); Alliant Tech (MN)



SPECIFICATIONS

Weight: Approximately 705 lbs.

Range: Gator configurations:

CBU-89 (static tail): ballistic trajectory;

CBU-104 (Wind Corrected Munition Dispenser (WCMD) tail): 10 nautical miles (NM)

Armament: Contains 72 BLU-91 anti-armor bomblets (4.31 lbs. each) and 22 BLU-92 anti-personnel bomblets (3.75 lbs. each)

Dimensions: *Length:* 92 in.; *Diameter:* 15.6 in.

Coverage: Coverage area (submunition pattern size) depends on many factors, but the pattern is typically circular with a diameter of about 200 feet.

Compatibility: The following aircraft can employ the Gator:

CBU-89: F-16, F-15E, F-117A, A-10, B-52, B-1B, B-2;

CBU-104: F-16, F-15E, B-52, B-1B

Program Status: No longer in production

Current Inventory: *CBU-89* Approx 9,900; *CBU-104* Approx 100

Future Upgrades: None

MISSION

Conduct persistent surface attacks and destroy moving and fixed land combat vehicles, including main battle tanks, providing multiple kills per weapon.



DESCRIPTION

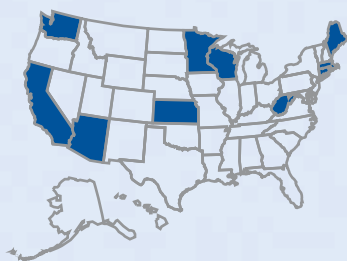
The Cluster Bomb Unit (CBU)-97 Sensor Fused Weapon (SFW) contains 10 BLU-108 submunitions, each with four projectiles, for a total of 40 independently targeted warheads. The warheads have an active laser and passive infrared (IR) sensors. The 40 warheads search a target area up to 30 acres and fire an Explosively Formed Projectile (EFP) into the target designated by correlating the active and passive sensor signatures.

The kill mechanism is an EFP copper liner formed with 2.2 lbs. of PBXN-11 explosive. The explosive force forms the copper into an armor penetrating projectile accelerated to hypervelocity.

The CBU-105 combines the CBU-97 and the Wind Corrected Munitions Dispenser (WCMD) tail kit which inertially steers the munition from a known release point to precise target coordinates while compensating for launch transients, winds aloft, surface winds and adverse weather.

CONTRACTORS

Prime: Textron (MA)
Subcontractor(s): Day & Zimmerman Inc (KS); Alliant Techsystems (WV, WI); General Dynamics (WA); Hi Shear (CA); Kurt Manufacturing (MN); Pacific Scientific (AZ); Pioneer Aerospace (CT); Reynard Corp (CA); Tundra Semiconductor (ME)



SPECIFICATIONS

Weight: 920 lbs.

Range: Two SFW configurations: CBU-97 (static tail): ballistic trajectory; CBU-105 (WCMD tail): 10 nautical miles (NM)

Armament: 10 BLU-108 submunitions

Dimensions: *Length:* 91 in.; *Diameter:* 15.6 in.

Coverage: The 40 warheads scan a target area up to 30 acres (1,600 ft. x 700 ft.).

Compatibility: The following aircraft can employ the SFW:

CBU-97: F-16, F-15E, A-10, B-52, B-1B, B-2;

CBU-105: F-16, F-15E, B-52, B-1B

Program Status: Production ends FY07

Current Inventory: *CBU-97:* approximately 90; *CBU-105:* 3,100

Future Upgrades: None

MISSION

Provide the warfighter with accurate weapons delivery in adverse weather from medium to high altitudes.



DESCRIPTION

The GBU-31, GBU-32, and GBU-38 Joint Direct Attack Munition (JDAM) series of precision guided munitions consists of existing inventory general purpose bombs integrated with "JDAM tail kits." The JDAM tail kit includes a new tail section and aero surfaces combined with a Global Positioning System aided Inertial Navigational System (GPS/INS) for precision all-weather delivery.

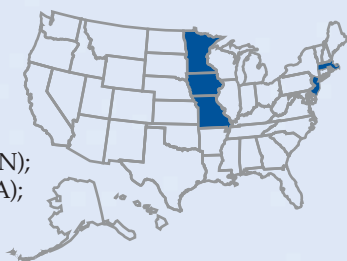
Aircraft can launch the JDAM from all altitudes in dive, toss, and loft maneuvers as well as straight and level flight with an on-axis or off-axis delivery.

JDAM enables the release of multiple weapons against single or multiple targets on a single pass. After thousands of engagements in the Kosovo, Afghanistan, and Iraq air-to-ground campaigns, warfighters have declared the JDAM "weapon of choice".

CONTRACTORS

Prime: Boeing (MO)

Subcontractors: Tail Actuator System - Textron (MA); Inertial Measurement Unit - Honeywell (MN); GPS Receiver - Rockwell-Collins (IA); Mission Computer - Lockheed Martin (NJ)



SPECIFICATIONS

Weight: *GBU-31* – Mk-84, BLU-109 2,000 lbs. bomb series;

GBU-32 – Mk-83/BLU-110 1000 lbs. bomb series ;

GBU-38 – Mk-82/BLU-111 500 lbs. bomb series

Range: <15 nautical miles (NM)

Dimensions: *GBU-31* (MK-84) 152.7 inches, (BLU-109) 148.6 inches;

GBU-32 (MK-83) 119.6 inches; *GBU-38* (MK-82) 96.2 inches

Warhead: Blast/Fragmentation: MK-82/BLU-111, MK-83/BLU-110, MK-84; Penetrator: BLU-109

Compatibility: Operational on: A-10C, B-1B, B-2A, B-52H, F-15E, F-16 Block 30, 40 & 50, F/A-18A+/C/D/E/F, F-22A, F-117, AV-8B

Guidance: Global Positioning System aided Inertial Navigation System (GPS/INS)

Program Status: Full rate production of JDAM *GBU-31*, *GBU-32* and *GBU-38* tail kits.

Current Inventory: Over 126,000 tail kits in Air Force, Navy and Marine inventory

Future Upgrades: Beginning with Lot 11, JDAM tail kits will start delivery in 2 QTR FY 08 with an Integrated GPS Anti-jam System (IGAS)

MISSION

Provide fighter and bomber aircraft with a tactically significant stand-off attack capability from outside of point defenses against fixed targets, while increasing loadout and minimizing collateral damage.



DESCRIPTION

The GBU-39/B Small Diameter Bomb (SDB) weapon system consists of the weapon (GBU-39/B), a four-place miniature munitions carriage system (BRU-61/A), mission planning system, accuracy support infrastructure, and logistics.

The SDB is a 250 lbs.- class weapon designed as a small autonomous, conventional, air-to-surface, near-precision weapon that is interoperable with established/projected Command, Control, Computers, Communications, Intelligence, Surveillance, and Reconnaissance (C4ISR) architectures and is compatible with current and future Air Force platforms.

CONTRACTORS

Prime: Boeing (MO)



SPECIFICATIONS

Weight: 285 lbs.

Range: ≥ 40 nautical miles (NM)
down-range from 0.8 mach at 40K
Mean Sea Level (MSL); ≥ 35 NM
cross-range from 0.8 mach at 40K Mean Sea Level (MSL)

Dimensions: *Length:* 71 in.; *Width:* 7.5 in.; *Height:* 7.8 in.

Warhead: Penetration/Blast/Fragmentation Warhead

Compatibility: Aircraft: Threshold - F-15E; Objective - F-22, F-16, F-35, F-117, B-52, B-1, B-2, A-10, and MQ-9

Guidance: Inertial Navigation System/Global Positioning System (INS/GPS) Guidance

Program Status: Low Rate Initial Production; Full Rate Production 1QFY07; projected inventory - 24,000; Required Assets Available (RAA) on F-15E met 28 August 2006; Initial Operational Capability (IOC) on F-15E declared 2 October 2006.

Current Inventory: 162 GBU-39/Bs, 20 BRU-61/As

Future Upgrades: Increment II to provide initial capability against moving targets in adverse weather. Focused Lethality Munition Joint Capability Technology Demonstration (JCTD) will integrate new warhead, potentially providing the ability to prosecute targets requiring minimized collateral damage (previously off-limits targets).

Joint Air-To-Surface Standoff Missile (JASSM)

MISSION

Provide stand-off capability to attack critical hardened and non-hardened, fixed and re-locatable targets defended by next-generation defense systems.



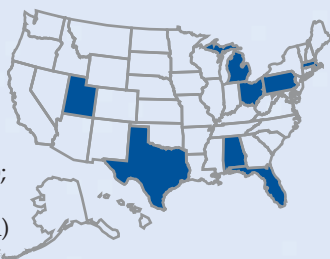
DESCRIPTION

The Joint Air-to-Surface Standoff Missile (JASSM) is a conventional, air-to-surface, precise, autonomous, low-observable, stand-off cruise missile capable of penetrating enemy defenses and striking high-value, fixed, or relocatable targets .



CONTRACTORS

Prime: Lockheed Martin (FL, AL);
Subcontractors: Teledyne
 Continental Engine (OH, AL);
 Williams International (MI, UT);
 Fiber Innovations (MA); Klune (UT);
 Wyman-Gordon Forgings (TX);
 L-3 Communications Telemetry (PA)



SPECIFICATIONS

Weight: 2,250 lbs.

Range: JASSM: Greater than 200 nautical miles (NM);
 JASSM-Extended Range (ER): Greater than 500 NM

Warhead: 1,000 lbs. Blast-Fragmentation and Penetration Warhead

Compatibility: Aircraft Compatibility: Threshold - B-52 and F-16;
 Objective - B-1, B-2, F-15, F-117, and F-35; JASSM-ER Threshold: B-1

Guidance: INS/GPS and an Imagine Infrared (IIR) Terminal Seeker

Program Status: Milestone (MS) I began Program Definition and Risk Reduction (PDRR) June 1996; MS II began engineering and manufacturing development (EMD) 1QFY99; Low rate initial production (LRIP) 1QFY02; MS III 4QFY04; Full rate production 1QFY05; Required Assets Available (RAA) declared on B-52, B-1, B-2, and F-16; Initial Operational Capability (IOC) on B-52 (Barksdale) and B-1 (Dyess) August 2005; on F-16 (Hill) May 2006; on B-2 (Whiteman) September 2006

Current Inventory: 455

Future Upgrades: JASSM Extended Range (JASSM-ER) - FY08 deliveries; JASSM 2-Way Weapon Data Link - FY10 deliveries

Wind Corrected Munitions Dispenser (WCMD) and WCMD-Extended Range (WCMD-ER)

MISSION

Provide accurate dispenser weapon capability when delivered from medium to high altitudes.

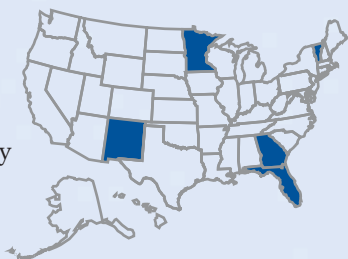


DESCRIPTION

The Wind Corrected Munitions Dispenser (WCMD) is a tail kit for use on inventory cluster weapons such as the Combined Effects Munition (CEM) and the Sensor Fused Weapon (SFW). The CEM is an anti-armor/anti-personnel weapon. The SFW is an anti-armor weapon. Development of the WCMD-Extended Range (ER) began in 2003 to add a wing kit and to integrate GPS into the WCMD-ER wing kit.

CONTRACTORS

Prime: Lockheed Martin (FL, GA)
Subcontractor(s): Honeywell
Military Avionics (MN); B.F.
Goodrich (VT); General Technology
Corporation (NM); Kurt
Manufacturing (MN)



SPECIFICATIONS

Weight: 100 lbs.

Dimensions: *Length:* 1.42 ft.; *Width:* 1.75 ft.; *Height:* 1.75 ft.

Compatibility: CBU-87, CBU-89, and CBU-97

Program Status: WCMD no longer in production; WCMD-ER terminated.

Current Inventory: 24,000

Depot Flight Test, Flight Test Support and Depot Maintenance

Highly experienced AFRC personnel augment and execute the USAF Air Force Materiel Command (AFMC) Depot Flight Test and Test Support programs. Reserve aircrews perform functional check flights, depot acceptance check flights, low-risk tests, as well as photo and safety chase in a test support role.

Reserve aircrews also provide a world-wide capability to retrieve battle-damaged aircraft from combat areas for needed repairs. These force integration initiatives free up Regular AF crews for warfighting and homeland defense missions.

As one of three Operations Groups under AFMC, the 413th Flight Test Group (FTG) provides operational direction and administrative control over six geographically separated units and is the only one composed entirely of Reservists. Today, the 413th FTG of Robins AFB, GA, consists of approximately 230 Reservists located at several bases throughout the United States. These Reserve Associate units perform flight tests on a variety of USAF aircraft, as follows:

413th Flight Test Group – Robins AFB, GA

10th Flight Test Squadron – Tinker AFB, OK: B-1, B-52, E-3, KC-135

313th Flight Test Flight – Lackland AFB, TX: KC-135

339th Flight Test Squadron – Robins AFB, GA: C-130, C-5, F-15

370th Flight Test Squadron – Edwards AFB, CA: C-12, F-16, KC-135, T-38

415th Flight Test Flight – Randolph AFB, TX: T-38

514th Flight Test Squadron – Hill AFB, UT: A-10, F-16, F-22, QF-4, C-130



AFRC also uses experienced Reservists to augment the USAF Air Force Materiel Command (AFMC) depot maintenance. The depot maintenance augmentation program started in the mid 1980s and was initially intended only to augment the depots in the event of a surge. It is comprised entirely of Individual Mobilization Augmentees (IMAs).

Mission

The Mission of the ANG/AFRC Test Center (AATC) is to conduct operational testing and field low-cost, low risk, off-the-shelf improvements to Air Reserve Component systems.

The Team

AATC is hosted by the 162nd Fighter Wing, Arizona Air National Guard located at the Tucson Air National Guard Base. The AATC team is staffed by approximately 35 Guard, Reserve, and Regular personnel along with approximately 20 government and contract personnel.

AATC houses a number of test units to include: The Air Force Flight Test Center (AFFTC) and the 53rd Test and Evaluation Group (TEG), the A-10A operational test detachment and the Electronic Warfare (EW) Combined Test Force.

AATC is responsible for testing a wide variety of ARC aircraft and systems to include A-10A, F-16 Blocks 25/32/40/42, B-52H, F-15A/B, HH-60H, HC-130, C-130, C-141 and KC-135 aircraft and their associated electronic combat systems.

AATC is uniquely postured to take advantage of modernization efforts that are funded by National Guard and Reserve Equipment Account (NGREA), which is unprogrammed funding suited to near-term improvements. AATC efforts exploiting NGREA resources complement long-range Air Force programs and have enabled efforts such as Night Vision Devices for fighter aircraft (first fielded in the ARC), Situational Awareness Data Link (SADL), a low-cost data link complementing Air Force network enabled operations, and Litening Targeting Pods, which greatly increased the number of precision strike aircraft in the AF inventory and revolutionized how the Air Force delivers joint fires and conducts non-traditional intelligence, surveillance, and reconnaissance.

WEPTAC

AATC hosts the annual combined Air National Guard Air Force Reserve Weapons and Tactics Conference. This conference functions as the Guard and Reserve Tactics Review Board, requirements prioritization vehicle, and is a premier warfighter tactics forum. The output of this conference is carried by working group chairmen to the respective active component CAF and MAF conferences.

USAF Flight Training

An excellent example of integration of the Air Force Reserve exists in the flight training programs of the USAF Air Education and Training Command (AETC). The US Air Force leverages the high level of experience of Reservists to teach young aviators to fly the aircraft of the USAF inventory. Through a variety of constructs, AFR Airmen augment training programs at the US Air Force Academy (USAFA) Cadet Airmanship Program, USAF Undergraduate Pilot Training (UPT) bases, and advanced operational flight training bases.

USAFA Cadet Airmanship

Air Force Reservists operate an associate unit at the US Air Force Academy (USAFA) and the Cadet Airmanship Program. The 70th Flying Training Squadron stood up in June 2004 as the 302nd Operations Group Detachment 1 and was subsequently activated as the 70th FTS in October 2005. The 70th FTS is comprised of 36 Reservists (32 officers, four enlisted) of which 31 are traditional Reservists and five are AGRs.

The 70th FTS operates at USAFA's airfield as an associate squadron to its host unit, the 306th Flying Training Group (Air Education Training Command). Reservists augment the instructor cadre, providing support to all USAFA cadet airmanship programs including the USAFA's Wings of Blue parachute team and Initial Flight Screening.

Reservists operate the following USAF Mission Design Series aircraft: TG-10 B/C Glider (Cadet Airmanship - Soaring); TG-15 A/B Glider (Cadet Airmanship - Soaring); UV-18 B Twin Otter (air drop - parachutists); T-41 Cessna 172 (Cadet Airmanship - Orientation); T-51 Cessna 150 (Cadet Flying Team); DA-20 Diamond Katana (Initial Flight Screening). Some of these aircraft are pictured below.





USAF Undergraduate Pilot Training (UPT)

Reservists bestow their high level of experience on new generations of aviators at UPT bases throughout the United States: Sheppard AFB, TX; Laughlin AFB, TX; Randolph AFB, TX; Columbus AFB, MS; and Vance AFB, OK. By associating with Regular Air Force training squadrons, instructor pilots teach student pilots on the training systems shown on the following pages:



For more on USAF undergraduate pilot training see:
<http://www.af.mil/factsheets/factsheet.asp?fsID=138>

MISSION

Provide advanced-phase Specialized Undergraduate Pilot Training (SUPT) for students selected to fly airlift or tanker aircraft.



DESCRIPTION

The T-1A Jayhawk is a medium-range, twin-engine jet trainer used in the advanced phase of SUPT. It is also used to support navigator training for the U.S. Air Force, Navy, Marine Corps, and international military services. It features cockpit seating for an instructor and two students and is powered by twin turbofan engines capable of an operating speed of (Mach .78).

CONTRACTORS

Prime: Raytheon (KS)



SPECIFICATIONS

Weight: 16,100 lbs.

Range: 2,222 nautical miles (NM)

Dimensions: *Length:* 48 ft. 5 in.;

Height: 13 ft. 11 in.; *Wingspan:* 43 ft. 6 in.

Program Status: Sustainment

AFR Airmen operating this equipment: Laughlin AFB, TX; Randolph AFB, TX; Vance AFB, OK; Columbus AFB, MS

MISSION

Train entry-level pilots in the fundamentals of flight.



DESCRIPTION

The T-6A Texan II is the Joint Primary Aircraft Training System (JPATS) aircraft. It replaces the USAF T-37B and the USN T-34C. The JPATS improves training, enhances safety, and offers increased aircrew accommodation. It also includes a Ground-Based Training System (GBTS) that includes Aircrew Training Devices (ATD), a Computer Based Training System (CBTS), courseware, and a Training Integration Management System (TIMS).

CONTRACTORS

Prime: Raytheon (KS)

Subcontractor(s): Engine - Pratt &

Whitney Canada (WV); Escape

System - Martin Baker Aircraft/

Middlesex (UK); Avionics -

Honeywell Aerospace

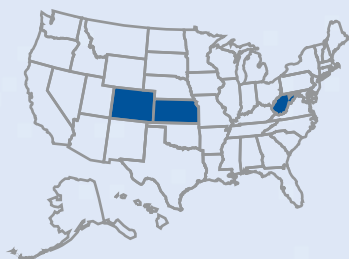
Electronic Systems/ Olathe (KS),

Smiths Aerospace Electronic

Systems/Cheltenham (UK);

Ground-Based Training System (GBTS) - Flight Safety Services

Corp. (CO)



SPECIFICATIONS

Weight: 6,500 lbs.

Range: 800+ nautical miles (NM)

Dimensions: *Wingspan:* 33.4 ft.; *Length:* 33.3 ft.; *Height* 10.6 ft.

Interoperability: Joint US Air Force/US Navy (USAF/USN)
primary trainer aircraft

Compatibility: Joint USAF/USN primary trainer aircraft

Service Ceiling: Maximum Operating Altitude - 31,000 ft.

Speed: 320 mph

Program Status: Full Rate Production (Fielding and Sustainment); for FY07, acquire 48 USAF and 21 USN aircraft; continue Ground-Based Training System (GBTS) acquisition; production planned through FY08 (USAF) and FY13 (USN); Projected Inventory: 779 total (451 USAF and 328 USN)

AFR Airmen operating this equipment: Laughlin AFB, TX; Randolph AFB, TX; Vance AFB, OK; Columbus AFB, MS; Sheppard AFB, TX

Future Upgrades: Numerous minor enhancements; Traffic Alert and Collision Avoidance System (TCAS) upgrade

MISSION

Provide the primary phase—Phase II—of Specialized Undergraduate Pilot Training to fill Air Force requirements for new pilots.



DESCRIPTION

The T-37B Tweet is a twin-engine jet used for training joint specialized undergraduate pilot students in the fundamentals of aircraft handling and instrument, formation, and night flying. The T-37B has been used since the 1950s to train Air Force pilots. Since the mid-1990s, the Air Force has gradually been procuring the T-6A Texan II as a follow-on aircraft to replace the aging T-37. All T-37s will be retired by the end of FY08.

CONTRACTORS

Prime: Cessna (KS)

SPECIFICATIONS

Weight: 6,625 lbs.

Range: 460 nautical miles (NM)

Dimensions: *Length:* 29 ft. 3 in.;
Height: 9 ft. 2 in.; *Wingspan:* 33 ft. 8 in.

Program Status: All T-37s will be retired by the end of FY08

AFR Airmen operating this equipment: Randolph AFB, TX;
Vance AFB, OK; Columbus AFB, MS; Sheppard AFB, TX

Current Inventory: Reg AF - 419; Air National Guard (ANG) - 0;
Reserve - 0



MISSION

Provide specialized pilot training, meeting pilot requirements of fighter/bomber crews.

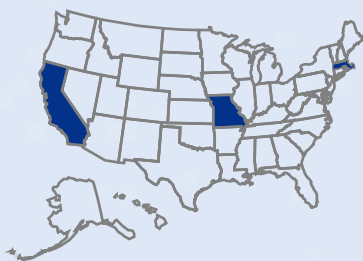


DESCRIPTION

The T-38A Talon is a twin-engine, high-altitude, supersonic jet trainer used in a variety of training roles, including Phase III of Specialized Undergraduate Pilot Training (SUPT) and Introduction to Fighter Fundamentals (IFF). The T-38 is also used as a companion trainer for some Air Combat Command aircraft such as the U-2, B-2, and F-117. Several T-38s are used as part of the Air Force Test Pilot School program. The T-38A has swept wings, a streamlined fuselage, and tricycle landing gear with a steerable nose wheel. The T-38B has a gun sight and practice bomb dispenser. The T-38C incorporates a "glass cockpit" with integrated avionics displays, head-up display and an electronic "no drop bomb" scoring system.

CONTRACTORS

Prime: Airframe - Northrop Grumman (CA); Avionics - Boeing (MO); Engines - GE (MA); Escape System - Martin Baker Aircraft/Middlesex (UK)



SPECIFICATIONS

Weight: 12,093 lbs.

Range: 1,093 nautical miles (NM)

Dimensions: *Length:* 46 ft., 4 in.; *Height:* 12 ft., 10 in.; *Wingspan:* 25 ft., 3 in.

AFR Airmen operating this equipment: Randolph AFB, TX; Vance AFB, OK; Sheppard AFB, TX; Laughlin AFB, TX; Columbus AFB, MS

Program Status: By the end of FY07, all Air Education and Training Command T-38s will be upgraded to T-38C status, which installs a “glass” cockpit and Global Positioning System. Current service life for the T-38C is projected to 2020. The T-38A and AT-38B are both going through the Avionics Upgrade Program (AUP) to be converted to the T-38C.

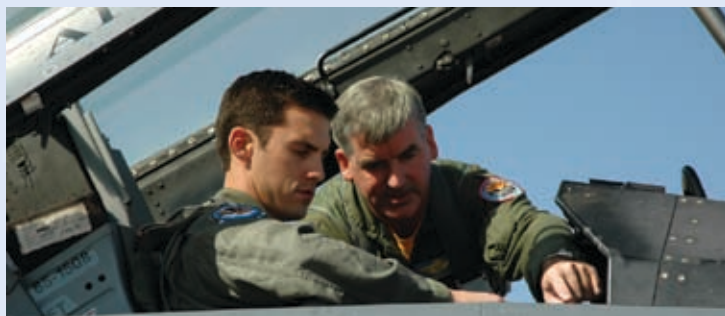
USAF Advanced Flight Training

Upon graduation from undergraduate flight training, aviators are placed in a variety of weapons systems, which they will learn to operate and employ at replacement training units. It is at these “schoolhouses” that newly minted aviators become the next fighter pilots or aircrew members of the USAF. Reservists are among the most experienced of these, and greatly assist the USAF in teaching these weapon systems to those who have just earned their wings.

Reserve instructors may be associate members of Regular Air Force training units such as the Introduction to Fighter Fundamentals (IFF) course at Sheppard AFB, TX, flying the AT-38B; or members of the Reserve associate units such as the 944th FW instructing the F-16 Fighting Falcon course at Luke AFB, AZ.

The Air Force Reserve's 433rd AW at Lackland AFB, TX, hosts C-5 Galaxy training for the USAF. The C-5 Formal Training Unit consists of both a student squadron, the 733rd Training Squadron and an instructor squadron, the 356th Airlift Squadron. These squadrons are directly responsible for getting the next generation of USAF C-5 Galaxy aircrew members fully qualified as pilots, engineers and loadmasters.

Similarly, the primary mission of the 94th Airlift Wing at Dobbins ARB, GA, is to train C-130H pilots, navigators, flight engineers and loadmasters for the United States Air Force – Regular, Guard and Reserve components.



Highly experienced Reservists also contribute to two advanced operational training facilities: The **Advanced Airlift Tactics Training Center** (AATTC), St Joseph, MO, provides current academic and combat flying training tactics to airlift aircrews. Similarly, the 926th Group of AFRC compliments Regular AF Units at the **USAF Warfare Center** (AFWC) at Nellis AFB, NV; AFWC provides academic and combat flying training to combat aircraft crews. The training at both AATTC and AFWC enhances survivability and mission success in a combat environment of not only USAF aircrews, but those of sister services and Allied nations as well.

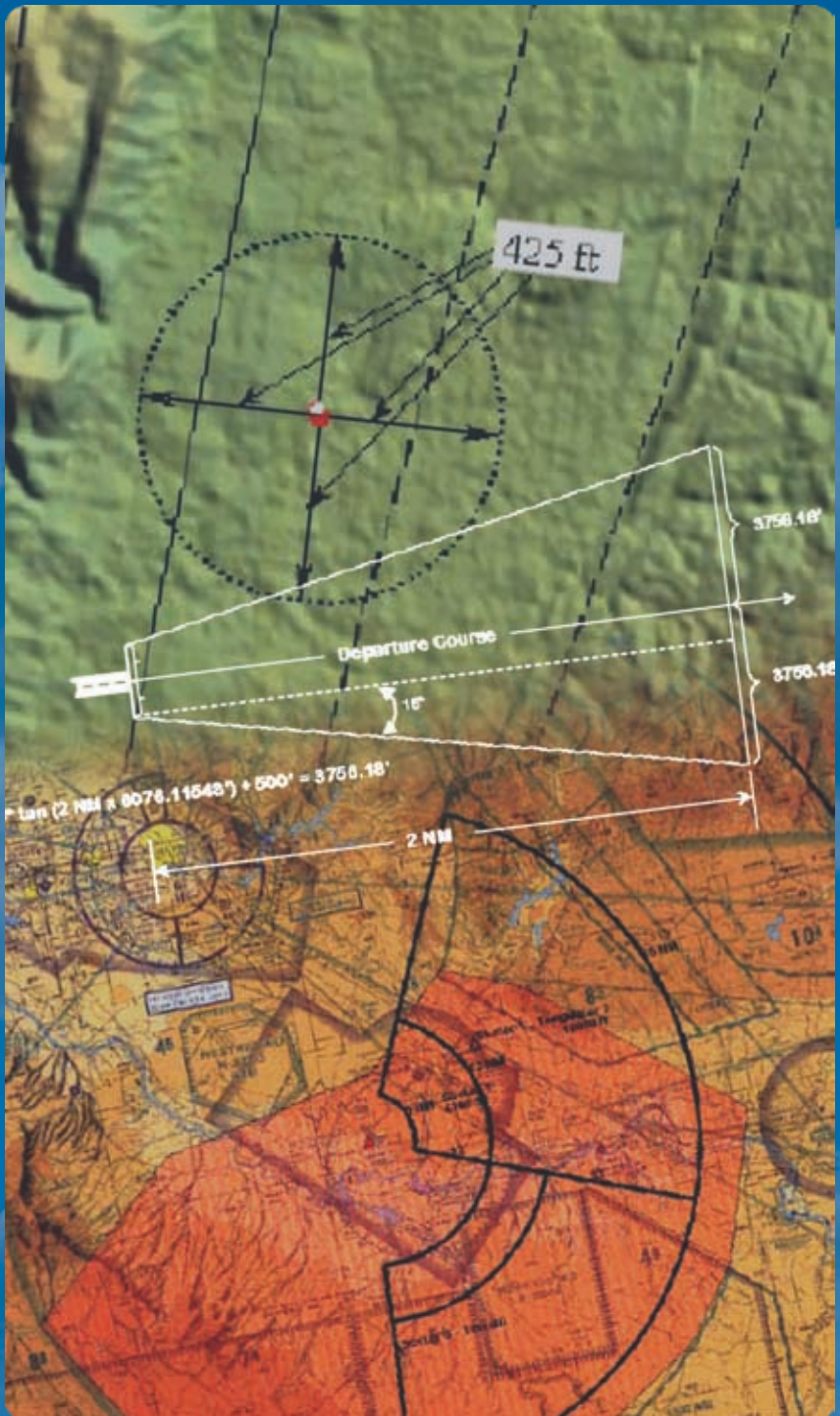


Navaid/Procedures Flight Inspection

The 1st Aviation Standards Flight (1st ASF) represents a new mission for the 507th Operations Group and the Air Force Reserve. This unit, working in tandem with the Federal Aviation Administration (FAA), performs flight inspections of navigational-aid radar and instrument procedures at military and civilian installations in the United States and overseas. The flight operates from the Will Rogers International World Airport, Oklahoma City, OK, and augments the Air Force Flight Standards Agency, Detachment 1, the on-site Regular Air Force unit.

The 1st ASF consists of approximately 23 people and is attached to the 507th ARW - Tinker AFB, OK, for administrative support. They fly and help maintain the FAA's British Aerospace BAe 125/800 "Hawker".







Alabama:

908th Airlift Wing - Maxwell Air Force Base

(Found on Pages: 15, 51, 71, 73, 77, 79, 105, 134)

<http://www.908aw.afrc.af.mil/>

Cmcl: 334-953-6804, DSN: 493-6804

Alaska:

477th Fighter Group - Elmendorf Air Force Base

(Found on Pages: 15, 77, 79, 147, 153, 171)

No website for the 477th Fighter Group, see 10th Air Force website link below and contact 10th Air Force for information.

<http://www.10af.afrc.af.mil/units/477fg/index.asp>

Cmcl: 817-782-6092, DSN: 739-6092

Arizona:

943rd Rescue Group - Davis-Monthan Air Force Base

(Found on Pages: 77, 101)

<http://www.920rqw.afrc.af.mil/units/>

Must contact through Davis-Monthan: Cmcl: 520-228-5952, DSN: 228-5952

944th Fighter Wing - Luke Air Force Base

(Found on Pages: 15, 51, 71, 73, 76, 79, 200)

<http://www.944fw.afrc.af.mil/>

Cmcl: 623-856-5388, DSN: 896-3490

California:

Headquarters, 4th Air Force - March Air Reserve Base

(Found on Pages: 15, 75-77, 206, 208)

<http://www.4af.afrc.af.mil/>

Cmcl: 951-655-4426, DSN: 447-4426

349th Air Mobility Wing - Travis Air Force Base

(Found on Pages: 15, 50, 53, 73, 75, 79, 105, 121, 125, 129)

<http://www.349amw.afrc.af.mil/>

Cmcl: 707-424-3937, DSN: 837-3937

452nd Air Mobility Wing - March Air Reserve Base

(Found on Pages: 15, 51, 71, 73, 75, 76, 79, 105, 123, 129)

<http://www.march.afrc.af.mil/>

Cmcl: 951-655-4137, DSN: 447-4137

California: (continued)

940th Air Refueling Wing - Beale Air Force Base

(Found on Pages: 15, 71, 73, 77, 79, 123, 141)

<http://www.940arw.afrc.af.mil/>

Cmcl: 530-634-1818, DSN: 368-1818

Colorado:

302nd Airlift Wing - Peterson Air Force Base

(Found on Pages: 15, 51, 71, 73, 76, 79, 96-97, 134, 190)

<http://www.302aw.afrc.af.mil/>

Cmcl: 719-556-4005, DSN: 834-4005

310th Space Wing - Schriever Air Force Base

(Found on Pages: 15, 26-28, 41, 55, 73, 77)

No website for 310th Space Group, contact 10th Air Force for questions.

Cmcl: 817-782-6092, DSN: 739-6092

Delaware:

512th Airlift Wing - Dover Air Force Base

(Found on Pages: 15, 73, 77, 79, 125, 129)

<http://www.512aw.afrc.af.mil/>

Cmcl: 302-677-3487, DSN: 445-3487

Florida:

482nd Fighter Wing - Homestead Air Reserve Base

(Found on Pages: 15, 51, 71, 73, 76, 79, 145)

<http://www.homestead.afrc.af.mil/>

Cmcl: 305-224-7303, DSN: 791-7303

919th Special Operations Wing - Eglin Air Force Base (Duke Field)

(Found on Pages: 15, 71, 73, 76, 79, 83, 109, 111)

<http://www.919sow.afrc.af.mil/>

Cmcl: 850-883-6347, DSN: 875-6347

920th Rescue Wing - Patrick Air Force Base

(Found on Pages: 15, 73, 76, 83, 98-99, 101, 103, 204, 208)

<http://www.920rqw.afrc.af.mil/>

Cmcl: 321-494-0535, DSN: 854-0535

927th Air Refueling Wing - MacDill AFB (FY08)

(Found on Pages: 15, 71, 73, 76, 79, 123, 207)

No website for 927th ARW, see 4th Air Force website link below and contact 4th Air Force for information.

<http://www.4af.afrc.af.mil/units/624rsg/index.asp>

Cmcl: 951-655-4426, DSN: 447-4426

Georgia:

Headquarters, 22nd Air Force - Dobbins Air Reserve Base

(Found on Pages: 15, 76-77 105, 206)

<http://www.22af.afrc.af.mil/>

Cmcl: 678-655-5467, DSN: 625-5467

94th Airlift Wing - Dobbins Air Reserve Base

(Found on Pages: 105, 134, 200)

<http://www.dobbins.afrc.af.mil/>

Cmcl: 678-655-5055, DSN: 625-5055

Headquarters, Air Force Reserve Command - Robins Air Force Base

(Found on Pages: 12, 16, 107, 211)

<http://www.afrc.af.mil/>

Cmcl: 478-327-1746, DSN: 497-1746

413th Flight Test Group - Robins Air Force Base

(Found on Pages: 15, 188)

No website for 413th Flight Test Group, contact 22nd Air Force for information.

Cmcl: 678-655-5467, DSN: 625-5467

Hawaii:

624th Reserve Support Group - Hickam Air Force Base

(Found on Pages: 15, 76, 79)

No website for 624th Reserve Support Group, see 4th Air Force website link below and contact 4th Air Force for information.

<http://www.4af.afrc.af.mil/units/624rsg/index.asp>

Cmcl: 951-655-4426, DSN: 447-4426

Illinois:

932nd Airlift Wing - Scott Air Force Base

(Found on Pages: 15, 71, 73, 75, 76, 79, 105, 126-127, 131)

<http://www.932aw.afrc.af.mil/>

Cmcl: 618-229-7024, DSN: 779-7024

Indiana:

434th Air Refueling Wing - Grissom Air Reserve Base

(Found on Pages: 15, 51, 71, 73, 75, 79, 123)

<http://www.grissom.afrc.af.mil/>

Cmcl: 765-688-3348, DSN: 388-3348

Kansas:

931st Air Refueling Group - McConnell Air Force Base

(Found on Pages: 15, 73, 77, 79, 123)

<http://www.931arg.afrc.af.mil/>

Cmcl: 316-759-3686, DSN: 743-3686

Louisiana:

917th Wing - Barksdale Air Force Base

(Found on Pages: 15, 51, 55, 71, 73, 76, 79, 137, 139, 157)

<http://www.917wg.afrc.af.mil/>

Cmcl: 318-456-9181, DSN: 781-9181

Maryland:

459th Air Refueling Wing - Andrews Air Force Base

(Found on Pages: 15, 51, 71, 73, 76, 79, 105, 123)

<http://www.459arw.afrc.af.mil/>

Cmcl: 240-857-6873, DSN: 857-6873

Massachusetts:

439th Airlift Wing - Westover Air Reserve Base

(Found on Pages: 15, 51, 71, 73, 76, 79, 105, 125)

<http://www.westover.afrc.af.mil/>

Cmcl: 413-557-3500, DSN: 589-3500

Michigan:

927th Air Refueling Wing - Selfridge Air National Guard Base

(Terminates FY08)

(Found on Pages: 15, 71, 73, 76, 79, 123)

<http://www.927arw.afrc.af.mil/>

Cmcl: 586-307-5575, DSN: 273-5575

Minnesota:

934th Airlift Wing - Minneapolis-St. Paul International Airport Air Reserve Station

(Found on Pages: 15, 51, 71, 73, 77, 79, 105, 134)

<http://www.minneapolis.afrc.af.mil/>

Cmcl: 612-713-1217, DSN: 783-1217

Mississippi:

403rd Wing - Keesler Air Force Base

(Found on Pages: 15, 51, 71, 73, 76, 79, 134)

<http://www.403wg.afrc.af.mil/>

Cmcl: 228-377-2056, DSN: 597-2056

Missouri:

442nd Fighter Wing - Whiteman Air Force Base

(Found on Pages: 15, 51, 71, 73, 76, 79, 137, 151)

<http://www.442fw.afrc.af.mil/>

Cmcl: 660-687-3844, DSN: 975-3844

Nevada:

926th Group - Nellis Air Force Base

(Found on Pages: 15, 76, 77, 200)

No website for 926th Group, contact 10th Air Force for information.

Cmcl: 817-782-6092, DSN: 739-6092

New Jersey:

514th Air Mobility Wing - McGuire Air Force Base

(Found on Pages: 15, 50, 53, 71, 73, 77, 79, 105, 121, 129, 188)

<http://www.514amw.afrc.af.mil/>

Cmcl: 609-754-3487, DSN: 650-3487

New York:

914th Airlift Wing - Niagara Falls International Airport Air Reserve Station

(Found on Pages: 15, 51, 71, 73, 77, 79, 105, 134)

<http://www.niagara.afrc.af.mil/>

Cmcl: 716-236-2136, DSN: 238-2136

North Carolina:

916th Air Refueling Wing - Seymour Johnson Air Force Base

(Found on Pages: 15, 51, 71, 73, 76, 79, 123)

<http://www.916arw.afrc.af.mil/>

Cmcl: 919-722-2230, DSN: 722-2230

440th Airlift Wing - Pope Army Airfield

(Found on Pages: 15, 51, 71, 77, 79, 134)

<http://www.440aw.afrc.af.mil/>

Cmcl: 910-394-5455, DSN: 424-5455

Ohio:

445th Airlift Wing, Wright - Patterson Air Force Base

(Found on Pages: 15, 51, 71, 73, 75, 79, 105, 125)

<http://www.445aw.afrc.af.mil/>

Cmcl: 937-257-5784, DSN: 787-5784

910th Airlift Wing - Youngstown-Warren Air Reserve Station

(Found on Pages: 15, 51, 71, 73, 77, 79, 94-95, 134)

<http://www.youngstown.afrc.af.mil/>

Cmcl: 330-609-1364, DSN: 346-1364

Oklahoma:

507th Air Refueling Wing - Tinker Air Force Base

(Found on Pages: 15, 51, 71, 73, 76, 79, 123, 202)

<http://www.507arw.afrc.af.mil/>

Cmcl: 405-734-3078, DSN: 884-3078

513th Air Control Group - Tinker Air Force Base

(Found on Page: 113)

513th Air Control Group does not have a website, see 10th Air Force website and contact 10th Air Force for information.

<http://www.10af.afrc.af.mil/units/513thaircontrolgroup/index.asp>

Cmcl: 817-782-6092, DSN: 739-6092

Oregon:

920th Rescue Wing (304th Rescue Squadron) - Portland IAP, OR (Guardian Angels)

(Found on Pages: 15, 73, 76, 83, 98-99, 101, 103)

<http://www.920rqw.afrc.af.mil/units/>

Must contact through Davis-Monthan:

Cmcl: 520-228-5952, DSN: 228-5952

939th Air Refueling Wing- Portland IAP, OR (closing FY08)

Contact 4th Air Force - March Air Reserve Base

(Found on Pages: 71, 73, 76, 79)

<http://www.4af.afrc.af.mil/>

Cmcl: 951-655-4426, DSN: 447-4426

Pennsylvania:

911th Airlift Wing - Pittsburgh International Airport Air Reserve Station

(Found on Pages: 15, 51, 71, 73, 79, 105, 134)

<http://www.pittsburgh.afrc.af.mil/>

Cmcl: 412-474-8511, DSN: 277-8511

South Carolina:

315th Airlift Wing - Charleston Air Force Base

(Found on Pages: 15, 71, 73, 76, 79, 105, 129)

<http://www.315aw.afrc.af.mil/>

Cmcl: 843-963-2035, DSN: 673-2035

Texas:

Headquarters, 10th Air Force - Naval Air Station Joint Reserve Base Fort Worth

(Found on Pages: 15, 76-77, 188, 204, 205, 208, 209)

<http://www.10af.afrc.af.mil/units/>

Cmcl: 817-782-6092, DSN: 739-6092

301st Fighter Wing - Naval Air Station Joint Reserve Base Fort Worth

(Found on Pages: 15, 51, 71, 73, 76, 79, 145,, 151, 171)

<http://www.301fw.afrc.af.mil/>

Cmcl: 817-782-5782, DSN: 739-5782

340th Flying Training Group - Randolph Air Force Base

(Found on Page: 15)

No website for 340th Flying Training Group, see 10th Air Force website and contact 10th Air Force for information.

<http://www.10af.afrc.af.mil/units/340ftg/index.asp>

Cmcl: 817-782-6092, DSN: 739-6092

433rd Airlift Wing - Lackland Air Force Base

(Found on Pages: 15, 51, 71, 73, 75, 79, 105, 125)

<http://www.433aw.afrc.af.mil/>

Cmcl: 210-925-5194, DSN: 945-5194

Utah:

419th Fighter Wing - Hill Air Force Base

(Found on Pages: 15, 51, 71, 73, 76, 79, 153)

<http://www.419fw.afrc.af.mil/>

Cmcl: 801-777-5232, DSN: 777-5232

Washington:

446th Airlift Wing - McChord Air Force Base

(Found on Pages: 15, 71, 73, 75, 79, 105, 129)

<http://www.446aw.afrc.af.mil/>

Cmcl: 253-982-2060, DSN: 382-2060



AEF – Air and Space Expeditionary Force

AEFC – Air and Space Expeditionary Force Center

AEHF – Advanced Extremely High Frequency

AETF – Air and Space Expeditionary Task Force

AFRC – Air Force Reserve Command

AGR – Active Guard and Reserve members who serve a tour of active duty under Title 10, U.S.C. They are full-time support personnel responsible for organizing, administering, instructing, training and recruiting for the Reserve Components.

ALCM – Air-Launched Cruise Missile. An air-launched vehicle designed to deliver a nuclear warhead in an air-to-ground mission.

AMRAAM – Advanced Medium Range Air-to-Air Missile

AMTI – Air Moving Target Indicator

ANG – Air National Guard; see ANGUS, below.

ANGB – Air National Guard Base

ANGUS – Air National Guard of the United States. A Reserve component of the Air Force.

AOC – Air Operations Center

ARB – Air Reserve Base

ARS – Air Reserve Station

ART – Air Reserve Technician

ASOC – Air and Space Operations Center. The senior agency of the Air Force component commander that provides command and control of Air Force air and space operations and coordinates with other components and services. Also called AOC.

BCT – Brigade Combat Team

BDA – Battle Damage Assessment

BLOS – Beyond Line of Sight

C2 – Command and Control

CAS – Close Air Support

CBU – Cluster Bomb Unit

CDR – Concept Design Review

CEM – Combined Effects Munition

CID – Combat Identification

CNS/ATM – Communication, Navigation and Safety/Air Traffic Management

Appendix B: Glossary

COCOM – Combatant Commander

CSAR – Combat Search and Rescue. Combat search and rescue is how the Air Force accomplishes the personnel recovery task. It is the Air Force's preferred mechanism for personnel recovery execution in uncertain or hostile environments and denied areas.

DE – Directed Energy

DSP – Defense Support Program

DT&E – Developmental Test and Evaluation. Any testing used to assist in the development and maturation of products, product elements, or manufacturing or support processes; any engineering-type test used to verify status of technical progress and minimize design risks, substantiate achievement of contract technical performance, and certify readiness for Initial Operational Testing (IOT).

ECM – Electronic Counter Measures

ERP – Enterprise Resource Planning

FAC – Forward Air Control

FFS – Forward Framing Sensor

Force Development – A series of experiences and challenges, combined with education and training opportunities, which is directed at producing Airmen who possess the requisite skills, knowledge, experience, and motivation to lead and execute the full spectrum of Air Force missions.

Force Protection – Actions taken to prevent or mitigate hostile actions against Department of Defense personnel (including family members), resources, facilities, and critical information.

FRP – Full Rate Production. Contracting for economic production quantities following stabilization of the system design and validation of the production process.

FYDP – Future Years Defense Program. A massive DoD database and internal accounting system that summarizes forces and resources associated with programs approved by the Secretary of Defense.

GIG – Global Information Grid. The globally interconnected, end-to-end set of information capabilities, associated processes, and personnel for collecting, processing, storing, disseminating, and managing information on demand to warfighters, policy makers, and support personnel.

Global Mobility – The capability to move people and equipment across the world quickly, ensuring the right force anywhere, at any time.

GMTI – Ground Moving Target Indicator

GWOT – The Global War on Terrorism

HUMRO – Humanitarian Relief Operations

IMINT – Imagery Intelligence

IMA – Individual Mobilization Augmentee

INS/GPS – Inertial Navigation System/Global Positioning System

IOC – Initial Operational Capability

IOT – Initial Operational Testing

IRR – Individual Ready Reserve consists of those members of the Ready Reserve who are not in the Selected Reserve or the Inactive National Guard.

ISR – Intelligence, Surveillance, and Reconnaissance. Integrated capabilities to collect, process, exploit and disseminate accurate and timely information that provides the battlespace awareness necessary to successfully plan and conduct operations.

JAOC – Joint Air Operations Center. A jointly staffed facility established for planning, directing, and executing joint air operations in support of the joint force commander's operation or campaign objectives. Also called Combined Air Operations Center (CAOC).

JCOMs – Joint Commands

JDAM – Joint Direct Attack Munition

JFACC – Joint Force Air Component Commander. The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for making recommendations on the proper employment of air forces; planning and coordinating air operations; or accomplishing such operational missions as may be assigned. The joint force air component commander is given the authority necessary to accomplish missions and tasks assigned by the establishing commander.

JFC – Joint Force Commander

JRB – Joint Reserve Base

LANTIRN – Low-Altitude Navigation and Targeting Infrared for Night

LOS – Line of Sight

LRIP – Low Rate Initial Production. The first effort of the Production and Deployment (P&D) phase. The purpose of this effort is to establish an initial production base for the system, permit an orderly ramp-up sufficient to lead to a smooth transition to Full Rate

Production (FRP), and to provide production representative articles for Initial Operational Test and Evaluation (IOT&E) and full-up live fire testing. This effort concludes with a Full Rate Production Decision Review (FRPDR) to authorize the Full Rate Production and Deployment (FRP&D) effort.

MAG – Marine Aircraft Group

MANPADS – Man Portable Air Defense Systems

MASINT – Measurement and Signature Intelligence

MCO – Major Combat Operation

MPA – Military Personnel Appropriation

MS – Milestone. The point at which a recommendation is made and approval sought regarding starting or continuing an acquisition program, e.g., proceeding to the next phase. Milestones established by DoDI 5000.2 include the following:

- MS A approves entry into the Technology Development (TD) phase;
- MS B approves entry into the System Development and Demonstration (SDD) phase;
- and
- MS C approves entry into the Production and Deployment (P&D) phase.

Also of note are the Concept Decision (CD) that approves entry into the Concept Refinement (CR) phase; the Design Readiness Review (DRR) that ends the System Integration (SI) effort and continues the SDD phase into the System Demonstration (SD) effort; and the Full Rate Production Decision Review (FRPDR) at the end of the Low Rate Initial Production (LRIP) effort of the P&D phase that authorizes Full Rate Production (FRP) and approves deployment of the system to the field or fleet.

NARS – Non-Affiliated Reserve Section

NAS – Naval Air Station

Operationally Response Space – The ability to rapidly deploy and employ communication, ISR, and other space capabilities.

ORS – Obligated Reserve Section

OT&E – Operational Test and Evaluation. The field test, under realistic conditions, of any item (or key component) of weapons, equipment, or munitions for the purpose of determining the effectiveness and suitability of the weapons, equipment, or munitions for use in combat by typical military users. It includes the evaluation of the results of such tests.

P3I – Preplanned Product Improvement. Planned future improvement of developmental systems for which design considerations are effected during development to enhance future application of projected technology. It includes improvements planned for ongoing systems that go beyond the current performance envelope to achieve a needed operational capability.

PDR – Preliminary Design Review. A multi-disciplined technical review to ensure that a system is ready to proceed into detailed design and can meet stated performance requirements within cost (program budget), schedule (program schedule), risk, and other system constraints.

Persistent C4ISR – The successful use of Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance (C4ISR), to ensure the ability to see first, think first, and act first in the battle space.

PIRR – Participating Individual Ready Reserve

PLS – Personnel Locator System

PR – Personnel Recovery

RAIDRS – Rapid Attack Identification Detection and Reporting System

Rapid Strike – The Air Force's ability to control air and space to deliver a precise, tailored effect anywhere, at any time.

RCT – Regimental Combat Team

RDT&E – Research, Development, Test, and Evaluation. Activities for the development of a new system or to expand the performance of fielded systems.

Ready Reserve – Unit or Individual Reservists, or both, liable for active duty, as provided in Title 10 U.S.C., Section 12301 and 12302. The Selected Reserve and the Individual Ready Reserve (Title 10 U.S.C., Sections 10142-10144) compose the Ready Reserve.

RMG – Reserve Management Group

RPA – Reserve Personnel Appropriation

RTAP – Reserve Transition Assistance Program

S&T – Science and Technology Program. Consists of projects in basic research, applied research, and Advanced Technology Development (ATD).

SA – Situational Awareness

SAM – Surface-to-Air Missile

SAR – Synthetic Aperture Radar

Appendix B: Glossary

SATCOM – Satellite Communications

SD – System Demonstration. The second effort of the System Development and Demonstration (SDD) phase. A program enters SD after the Program Manager (PM) has demonstrated the system in prototype articles or Engineering Development Models (EDMs). The effort is intended to demonstrate the ability of the system to operate in a useful way consistent with the approved Key Performance Parameters (KPPs). This effort ends when the system is demonstrated in its intended environment using the selected prototype; meets approved requirements; industrial capabilities are reasonably available; and the system meets or exceeds exit criteria and Milestone C entrance requirements.

SDB – Small Diameter Bomb

SDD – System Development and Demonstration. The third phase of a system life cycle. This phase consists of two efforts, System Integration (SI) and System Demonstration (SD), and begins after Milestone B. It also contains a Design Readiness Review (DRR) at the conclusion of the SI effort.

SEAD/DEAD – Suppression/Destruction of Enemy Air Defenses

Selected Reserve – Those unit and individuals within the Ready Reserve designated by their respective Services and approved by the Joint Chiefs of Staff as so essential to initial wartime missions they have priority over all other Reservists. All Selected Reservists are in an active status. The Selected Reserve also includes people performing initial active duty for training.

SIGINT – Signals Intelligence

SMTI – Surface Moving Target Indication

SOF – Special Operations Force

SRR – System Requirements Review. A review conducted to ascertain progress in defining system technical requirements. This review determines the direction and progress of the systems engineering effort and the degree of convergence upon a balanced and complete configuration.

SSA – Space Situational Awareness

Sustainment – Execute support program to meet operational support performance requirements and sustain systems in the most cost-effective manner over its life cycle. Includes supply, maintenance, transportation, sustaining engineering, data management, Configuration Management (CM), manpower, personnel, training, habitability, survivability, environment, safety (including explosives safety), occupational health, protection of critical program information, anti-tamper provisions, Information

Technology (IT) (including National Security Systems (NSSs)), supportability, and interoperability functions.

T&E – Test and Evaluation. Process by which a system or components are exercised and results analyzed to provide performance-related information. The information has many uses including risk identification and risk mitigation and empirical data to validate models and simulations. T&E enables an assessment of the attainment of technical performance, specifications, and system maturity to determine whether systems are operationally effective, suitable and survivable for intended use, and/or lethal.

TARS – Theater Airborne Reconnaissance System

Threat – The sum of the potential strengths, capabilities, and strategic objectives of any adversary that can limit or negate U.S. mission accomplishment or reduce force, system, or equipment effectiveness.

TR – Traditional Reservist

TST – Time Sensitive Targeting

UAS – Unmanned Aerial System. Also called UAV.

UCAV – Unmanned Combat Aerial Vehicle

USERRA – Uniformed Services Employment and Reemployment Rights Act

WMD – Weapons of Mass Destruction



**For More on the Air Force Reserve
See
<http://www.afrc.af.mil>**



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